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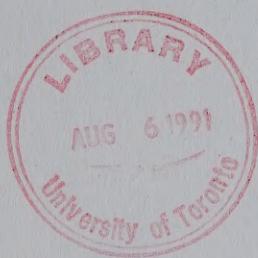


Government
Publications

National Energy Board

Reasons for Decision

**TransCanada
PipeLines Limited**



GH-1-91

July 1991

Facilities



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National Energy Board

Reasons for Decision

In the Matter of

**TransCanada PipeLines
Limited**

Application Under Part III of the
National Energy Board Act for
Construction of Facilities

GH-1-91

July 1991

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(i)

Recital and Appearances

GH-1-91

IN THE MATTER OF the *National Energy Board Act* ("the Act") and the regulations made thereunder;

AND IN THE MATTER OF an application by TransCanada PipeLines Limited pursuant to section 58 of the Act for the construction of a pipeline and associated facilities to provide new export service at Chippawa, Ontario,

AND IN THE MATTER OF of Hearing Order GH-1-91.

HEARD at Niagara Falls, Ontario on 22, 23, 24, 25 and 26 April 1991 and at Ottawa, Ontario on 6 May 1991.

BEFORE:

M.J. Musgrove	Presiding Member
A.B. Gilmour	Member
A. Côté-Verhaaf	Member

APPEARANCES:

J.W.S. McOuat, Q.C.	TransCanada PipeLines Limited
E.P. Varga	

P.L. Fournier	Canadian Petroleum Association
---------------	--------------------------------

A.S. Hollingworth	Independent Petroleum Association of
J.A. Snider	Canada

R.J. Harrison	ANR Pipeline Company
---------------	----------------------

J.H. Smellie	Centra Gas Ontario Inc.
--------------	-------------------------

J.H. Smellie	CNG Transmission Corporation
--------------	------------------------------

J.H. Farrell	The Consumers' Gas Company Ltd.
--------------	---------------------------------

F.X. Berkemeier	Consumers Power Company
-----------------	-------------------------

D.W. Rowbotham	Enserch Development Corporation
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D.G. Davies	Fulton Cogeneration Associates
-------------	--------------------------------

D.A. Holgate	Kamine Carthage Cogen Co., Inc.; and Beta Carthage Inc.
--------------	--

(ii)

D. Reitz	National Fuel Gas Supply Corporation
M.M. Fabic	Niagara Mohawk Power Corporation
S.W. Widger, Jr.	Rochester Gas and Electric Corporation
D.G. Hart, Q.C.	St. Clair Pipelines Ltd.
N.J. Schultz F.G. Berner, Jr. A.C. Geolot W.D. Rapp	Tennessee Gas Pipeline Company
P.H. McMillan	Unigas Corporation
G.A. Cameron M.J. Samuel	Union Gas Limited Western Gas Marketing Limited
A.F. Kroening	On his own behalf and as a Member of the Niagara County Legislature of the State of New York
H. Rempel	On his own behalf
W.M. Moreland	Alberta Petroleum Marketing Commission
M.A. Fowke	National Energy Board

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Abbreviations

Act	<i>National Energy Board Act</i>
ANR	ANR Pipeline Company
APMC	Alberta Petroleum Marketing Commission, The
Assessment Report	Environmental and Socio-Economic Impact Assessment Report
Bcf	billion cubic feet
Bcf/d	billion cubic feet per day
Blackhorse Extension (or Blackhorse)	Proposed pipeline from TransCanada's Niagara Line near Thorold, Ontario to a delivery point near Chippawa, Ontario.
Board	National Energy Board
cogeneration shippers	Encogen, Fulton, Kamine, Indeck-IIion and Indeck-Corinth
CNG	CNG Transmission Corporation
CPA	Canadian Petroleum Association
DOE/FE	U.S. Department of Energy / Office of Fossil Energy
Empire	Empire State Pipeline Limited
Encogen	Encogen Four Partners, L.P.
Enserch	Enserch Development Corporation
ESA	Environmentally Sensitive Area
FERC	(United States) Federal Energy Regulatory Commission
FS	Firm Service
Fulton	Fulton Cogeneration Associates
GH-5-89	Hearing Order GH-5-89 in respect of TransCanada's application for 1991 and 1992 facilities

GH-1-91	Hearing Order GH-1-91 in respect of TransCanada's application for the Blackhorse Extension
GMi	Gaz Métropolitain, inc.
Great Lakes or GLGT	Great Lakes Gas Transmission Company
IGUA	Industrial Gas Users Association
Indeck-Corinth	Indeck Gas Supply Corporation-Corinth
Indeck-IIlion	Indeck Gas Supply Corporation-IIlion
IPAC	Independent Petroleum Association of Canada
IPL	Interprovincial Pipeline Limited
Kamine Carthage	Kamine Carthage Cogeneration Company , Inc. and Beta Carthage Inc.
km	kilometre(s)
LDC	local distribution company
m	metre(s)
m³/d	cubic metres per day
mm	millimetre(s)
MMcf/d	million cubic feet per day
MW	megawatt(s)
NFG	National Fuel Gas Supply Corporation
NGA	Natural Gas Act (United States)
Niagara Mohawk	Niagara Mohawk Power Corporation
Niagara Pipeline	Niagara Pipeline Limited
NYSPSC	New York State Public Service Commission
O.D.	outside diameter
OEB	Ontario Energy Board
OMNR	Ontario Ministry of Natural Resources
OPCC	Ontario Pipeline Coordination Committee

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RG&E	Rochester Gas and Electric Corporation
RQ Contract	Requirements Contract
SMS	sales meter station
St. Clair	St. Clair Pipelines Limited
Tennessee	Tennessee Gas Pipeline Company
TransCanada or TCPL	TransCanada PipeLines Limited
Unigas	Unigas Corporation
Union	Union Gas Limited
U.S.	United States of America

Overview

(Note: This overview is provided solely for the convenience of the reader and does not constitute part of this Decision or the Reasons, to which readers are referred for detailed text and tables.)

The Application

On 20 July 1989, TransCanada Pipe Lines Limited ("TransCanada") filed an application under section 58 of the *National Energy Board Act* for construction of a pipeline called the Blackhorse Extension from its existing Niagara Line at the Blackhorse Sales Meter Station to a proposed new export point at Chippawa, Ontario. This application was amended on 21 December 1990. TransCanada proposed the construction of 20.6 km of 610 mm O.D. pipe and installation of a 6.3 MW compressor at Kirkwall, Ontario with associated metering facilities at Chippawa for a total estimated capital cost of \$42.4 million dollars. TransCanada submitted that the proposed facilities would enable the transportation of $6\ 708\ 10^6\text{m}^3$ (236.8 MMcfd) of gas for export to the proposed Empire State Pipeline.

Highlights of the Board's Decision

The National Energy Board ("The Board") decided there is clear evidence that the markets proposed to be served by the Blackhorse Extension can be served by less expensive and environmentally superior means in a timely fashion through expansion of the existing Niagara Line. The Board determined, therefore, that the proposed facilities were not required and consequently denied TransCanada's application. In light of the finding against the need for the proposed facilities, the Board made no findings on other issues raised in the proceedings.

Environmental Screening

In accordance with the *Environmental Assessment and Review Process Guidelines Order*, the Board conducted an environmental screening of TransCanada's application. The Board's environmental screening determined that the potentially adverse environmental effects and any directly-related social effects associated with TransCanada's applied-for facilities would be insignificant or mitigable with known technology. However, the Board also found, after conducting the public hearing and assessing all aspects of the proposal that a viable alternative means of accessing the targeted markets existed by expanding TransCanada's Niagara Line through the addition of compression and metering facilities which would result in minimal environmental impact.

Part III Matters

The Application

1.1 The Proposed Blackhorse Extension Facilities

TransCanada PipeLines Limited ("TransCanada") has proposed the construction of a single 610 mm (24 inch) O.D. line called the Blackhorse Extension which would tie-in to existing facilities on its Niagara Line 200-2 near the Blackhorse Sales Meter Station ("SMS") (see Figure 1-1). The pipeline would extend approximately 20.6 km (12.9 miles) to connect with the proposed Empire State Pipeline Limited ("Empire") system in the United States at Grand Island, New York. New metering facilities would be constructed near the Canada/U.S. border with a single pipeline crossing of two channels of the Niagara River to be provided by Empire.

TransCanada also proposed installing a second compressor unit at Station 1301 near Kirkwall, Ontario. It was TransCanada's plan to install a 6.3 MW skid-mounted portable unit in 1991, to be used until a permanent unit could be installed some time in 1992. The total cost of the proposed facilities in 1991 dollars was estimated to be \$42.4 million. Table 1-1 summarizes the proposed facilities and their associated costs. Table 1-2 illustrates the Blackhorse Extension peak capacity requirements, forecast annual throughputs and estimated load factors.

1.2 Empire Pipeline Facilities

The proposed Empire system (see Figure 1-1) is a 248 km (155 mile), 610 mm (24 inch) O.D. pipeline which would commence at Grand Island, New York on the Canada/U.S border and terminate at a point near Syracuse, New York. No compression facilities would be required initially for the Empire system which would be intended to transport requirements of 7.6 $10^6 \text{ m}^3/\text{d}$ (270 MMcf/d).

Subsidiaries of Union Energy Limited and The Coastal Corporation (St. Clair Pipelines Company Limited ("St. Clair") and the ANR Pipeline Company ("ANR") respectively) would be equal owners of the Empire facilities. Upon receipt of all regulatory approvals, Rochester Gas and Electric Corporation ("RG&E") would acquire a 20 percent interest in the Empire project from St. Clair.

In conjunction with Empire, National Fuel Gas Supply Corporation ("NFG") proposes to construct 8.7 km (5.4 miles) of pipeline in two segments to provide service to three cogeneration plants and to reinforce its existing pipeline system, particularly in the Buffalo metropolitan area.

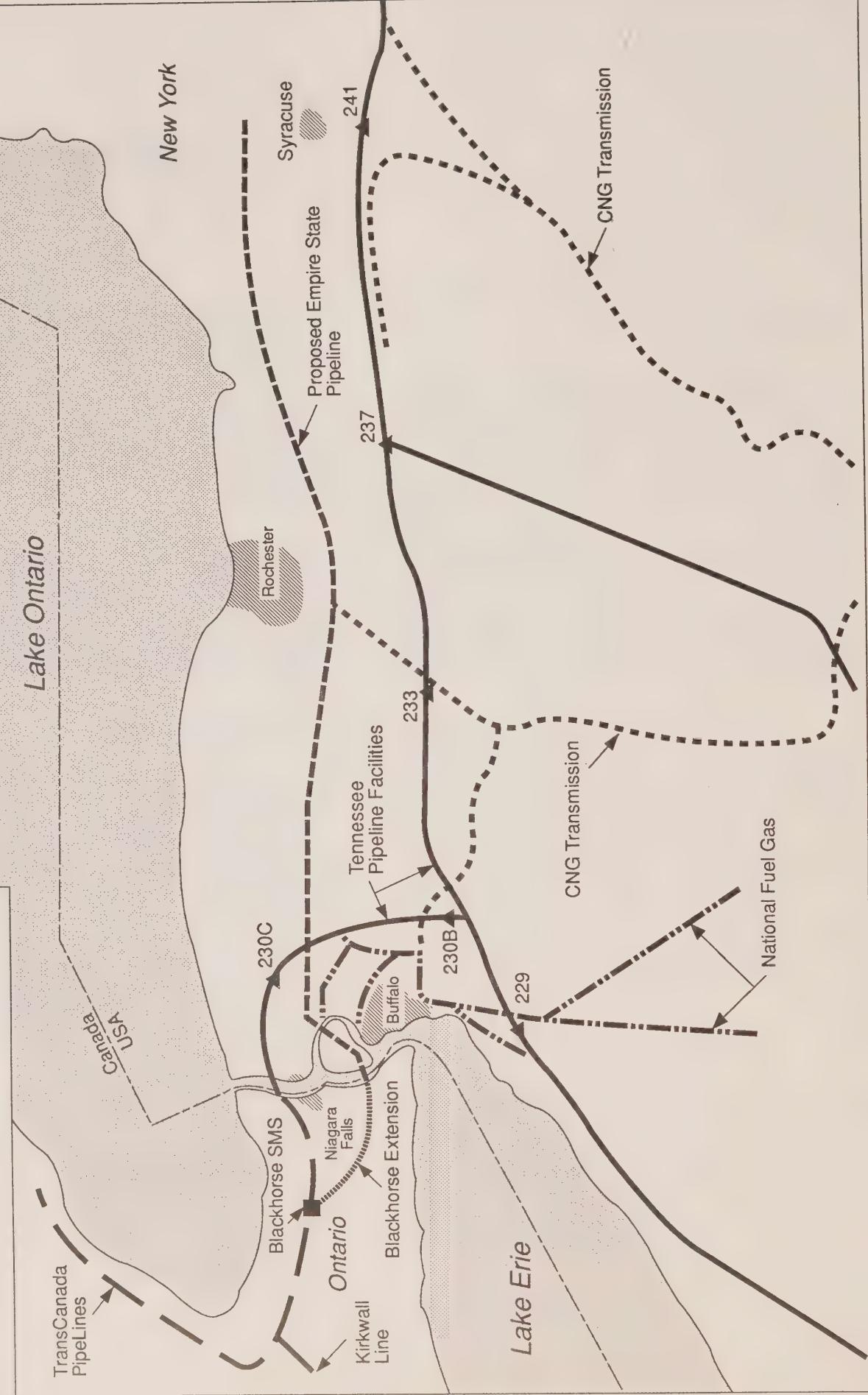
1.3 Sequence of Events

On 17 January 1989, Niagara Pipeline Limited ("Niagara Pipeline"), on behalf of St. Clair filed an application with the National Energy Board ("Board") for construction of a 610 mm (24 inch) pipeline, 92 km (58 miles) in length from Union Gas Limited's ("Union") facilities in Ancaster, Ontario to an interconnection with the proposed Empire system at Grand Island, New York. The facilities, estimated to cost \$62.2 million in 1989 dollars and expected to be in service by November 1990, would have provided a competitive alternative to TransCanada's Niagara export point.

Niagara Pipeline's application was withdrawn in July 1989 as part of an agreement reached between TransCanada and Union. The agreement stipulated that "TransCanada shall use all reasonable efforts to have placed in service facilities from Kirkwall to an interconnection with Empire State Pipeline at Grand Island, New York in order to provide

Figure 1-1

Location of Existing and Proposed Facilities in the Niagara Area



transportation service for the volumes of gas requested by any shippers on the Empire State Pipeline for delivery at Grand Island, New York at the same time as the Empire State Pipeline facilities are placed in service. TransCanada shall use its best efforts to obtain approval of a Point to Point Toll for any such transportation service.". As part of the same agreement, TransCanada was also expressly prohibited from opposing construction of the St. Clair pipeline or the Empire State Pipeline.

On 20 July 1989, TransCanada applied to the Board under section 58 of the *National Energy Board Act* ("the Act") for construction of the Blackhorse Extension. Supplementary environmental and socioeconomic information was filed in support of the application in September 1989.

By letter to TransCanada dated 2 October 1989, the Board indicated that the application was deficient and would not be considered until additional information regarding supply and sales arrangements was provided.

On 9 April 1990, TransCanada filed additional information respecting the purchase and sales arrangements for some of the shippers on the proposed Blackhorse Extension. On 14 June 1990, the Board advised TransCanada that the application was not yet ready for consideration because of the uncertainty surrounding downstream transportation arrangements and because of deficiencies in the application with respect to certain of the gas purchase and sales agreements.

In response to a Board information request issued 6 December 1990, TransCanada provided an updated application to reflect changes in circumstances since 1989. The revised application relied solely on the RG&E volumes to support the proposed facilities.

Based upon TransCanada's response, the Board decided to set the application down for hearing and issued Hearing Order GH-1-91 on 20 February 1991.

Prior to the start of the hearing, TransCanada further amended the application to include four cogeneration projects: Encogen Four Partners, L.P. ("Encogen"), Fulton Cogeneration

Associates ("Fulton"), Indeck Gas Supply Corporation - Indeck-Corinth ("Indeck-Corinth"), and Kamine Carthage Cogeneration Co, Inc. and Beta Carthage Inc. ("Kamine Carthage"). TransCanada requested that evidence in respect of these projects be adopted from the GH-5-89 proceedings. Over the course of the hearing, Indeck Gas Supply Corporation - Indeck-IIlion ("Indeck-IIlion") was also identified as a potential shipper on the Blackhorse Extension.

The hearing was held in Niagara Falls, Ontario on 22-26 April 1991 and final argument was heard in Ottawa, Ontario on 6 May 1991.

On 4 July 1991, in response to a request by TransCanada, the Board released its Decision, denying the applied-for facilities.

TABLE 1-1
BLACKHORSE EXTENSION
ESTIMATED COST OF FACILITIES

		ESTIMATED COST (000's of 1991 Canadian Dollars)
PIPELINE:		
20.6 km of 610 mm O.D.		23 290
PORTABLE COMPRESSOR:		
6.3 MW at new station 1301 (Nov. 1991)		2 380
PERMANENT COMPRESSOR:		
6.3 MW at new station 1301 (1992)		12 710
METERING:		
2 Meter Runs		1 990
TOTAL CAPITAL COST		<hr/> 42 370

TABLE 1-2
BLACKHORSE EXTENSION
DAILY MAXIMUM AND ANNUAL THROUGHPUTS AND LOAD FACTORS

COMPANY	DAILY MAXIMUM		ANNUAL THROUGHPUT		LOAD FACTOR	
	10^3 M^3 (MMcf)		10^6 M^3 (Bcf)		%	
	1991	1992	1991	1992	1991	1992
RG&E	3 328.5 (117.5)	4 885.3 (172.5)	396.5 (14.0)	566.4 (20.0)	32.6	31.8
Encogen	0.0 (0.0)	424.9 (15.0)	0.0 (0.0)	155.1 (5.5)	0.0	100.5
Fulton	326.2 (11.5)	326.2 (11.5)	119.0 (4.2)	119.0 (4.2)	100.1	100.1
Indeck-Corinth	0.0 (0.0)	459.0 (16.2)	0.0 (0.0)	168.0 (6.0)	0.0	101.5
Indeck-Ilion ¹	0.0 (0.0)	210.0 (7.4)	0.07 (0.0)	3.0 (2.6)	0.0	96.3
Kamine Carthage	402.3 (14.2)	402.3 (14.2)	139.5 (4.9)	139.5 (4.9)	94.5	94.5
TOTAL	4 057 (143.2)	6 707.7 (236.8)	655.0 (23.1)	1 221.0 (43.2)	44.2	50.0

1. While Indeck-Ilion was not initially included in support of the facilities, it was subsequently identified as a potential shipper on the proposed facilities.

Chapter 2

Gas Market Requirements

2. Gas Market Requirements

The proposed Blackhorse Extension facilities would be used by RG&E to serve its New York State franchise area and by shippers to serve cogeneration projects to be constructed at various locations throughout New York State. Figure 2-1 illustrates the proposed build-up of peak-day requirements on the Blackhorse Extension.

2.1 Rochester Gas and Electric Corporation

RG&E is a combined electric and natural gas distribution utility serving approximately 260,000 gas customers in a geographical area comprising the City of Rochester and parts of seven surrounding counties in western New York State. RG&E's franchise area has a population of approximately 900,000.

The gas distribution system, which used approximately $1\ 416.0\ 10^6\ m^3$ (50 Bcf) of gas in 1990, serves a diversified industrial, commercial and residential customer base. RG&E also provides transportation service for third parties. For 1991, the composition of RG&E's gas requirements, by class of customer, is forecast to be as follows:

<u>Customer Class</u>	<u>Percentage (%)</u>
Residential	57
Commercial	21
Industrial	16
Municipal	6

RG&E is currently dependent on CNG Transmission Corporation ("CNG") for most of its annual system supply requirements and for all its transportation. Specifically, under their requirements contract ("RQ contract"), CNG is obligated to supply and RG&E is obligated to purchase RG&E's full gas requirements except for 25 percent which may be purchased from

other suppliers. RG&E indicated it has purchased $368\ 10^6\ m^3$ (13 Bcf) of its annual system throughput from a portfolio of U.S. suppliers under short-term contracts.

RG&E is actively pursuing a program of gas supply, transportation and storage diversification in order to lessen its dependence on CNG and to obtain alternative services at competitive prices and on favorable terms. The extent to which RG&E will decontract with CNG will depend on the provisions of a CNG/RG&E settlement agreement and on the availability of Empire capacity.

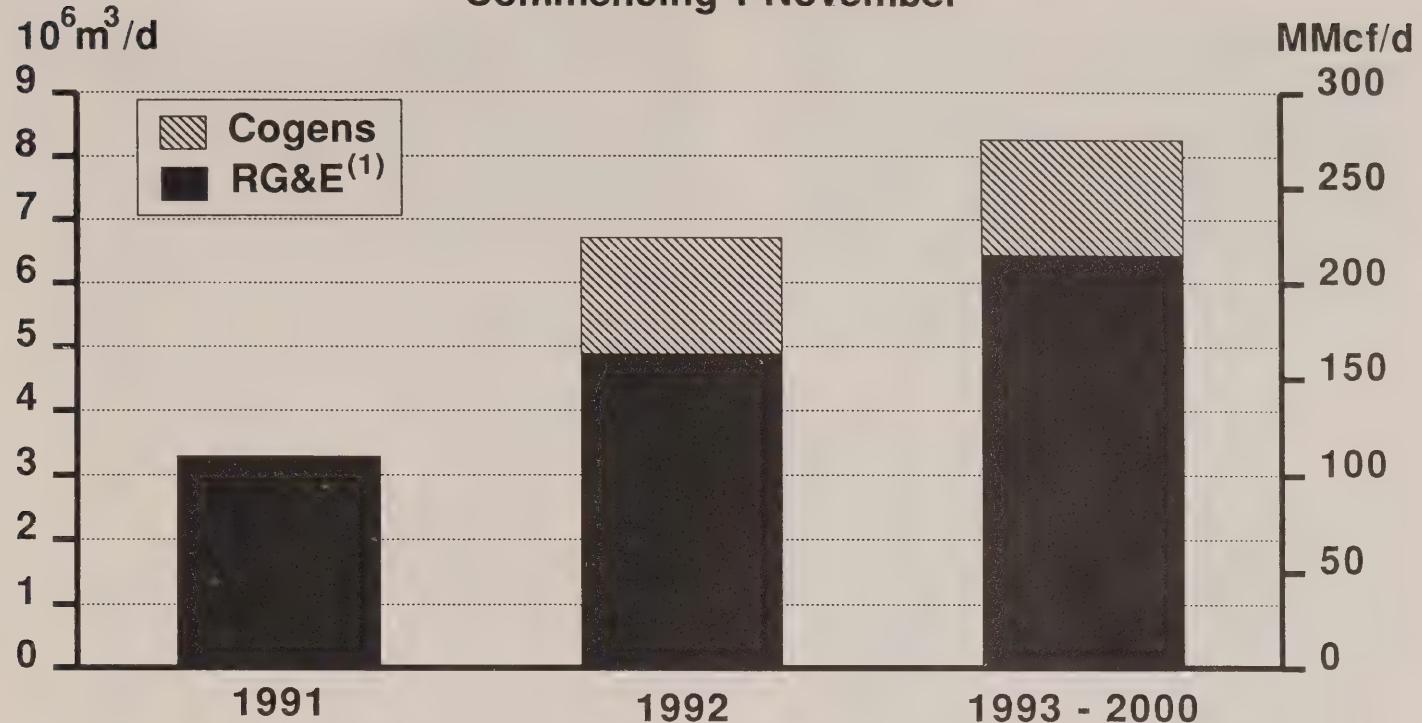
Pursuant to the settlement agreement with CNG, RG&E will have the option to reduce its peak day sales service entitlement of $9\ 320.0\ 10^3\ m^3/d$ (329.0 MMcf/d) by $3\ 328.5\ 10^3\ m^3/d$ (117.5 MMcf/d) initially and by two further reductions of $1\ 189.8\ 10^3\ m^3/d$ (42.0 MMcf/d) each. The settlement agreement also provides for reductions in RG&E's annual entitlement or annual contract quantity.

The settlement agreement also stipulates that CNG and RG&E enter into a firm transportation service agreement for $1\ 558.0\ 10^3\ m^3/d$ (55.0 MMcf/d). To facilitate use of this transportation, CNG is to assist RG&E in securing the conversion and the transfer to RG&E of CNG's upstream capacity entitlements on the Tennessee, Texas Eastern Transmission Corporation, and Texas Gas Transmission Corporation pipeline systems to access gas in the Texas and Louisiana supply basins.

RG&E indicated that it intends to use the Blackhorse Extension and Empire facilities to replace corresponding levels of supply and transportation on the CNG system. The Blackhorse Extension would permit RG&E to

Figure 2-1

**Blackhorse Extension Peak Day Pipeline Requirement
Commencing 1 November**



(1) Includes the step-up volumes of $1\ 558.0\ 10^3\ \text{m}^3/\text{d}$ (55.0 MMcf/d)
In each of the years commencing 1 November 1992 and 1993.

receive gas supply through two alternative means upstream of Kirkwall, Ontario. Firstly, RG&E would be able to access Canadian-sourced gas on the TransCanada system from Empress, Alberta (i.e. long-haul gas). Secondly, RG&E would be able to access U.S.-sourced gas (i.e. short-haul or transit gas) on the ANR and Great Lakes Gas Transmission Company ("Great Lakes or GLTC")

systems through Michigan to the interconnection with TransCanada at St. Clair/Sarnia, Ontario and from there, through the TransCanada and Union systems to Kirkwall, Ontario. The second routing would also allow RG&E to access Canadian-sourced gas off the Great Lakes/TransCanada system.

RG&E proposes to ship the following transit volumes via the Blackhorse Extension:

**Table 2-1
Proposed Transit Volumes - RG&E**

Term		Peak Daily Volume (10^3 m^3)	Source of Supply
From:	To:	(MMcf)	
1 Nov 91	31 Oct 06	2 875.3	U.S.
1 Nov 91	31 Oct 06	453.2	U.S./Cdn ¹
1 Nov 92	31 Oct 06	1 558.0	U.S.
1 Nov 93	31 Oct 06	<u>1 558.0</u>	U.S.
	Total	6 444.5	227.5

1 Until it receives the necessary Board export authorization and arranges for transportation service on the TransCanada system from Empress, Alberta to Chippawa, Ontario to ship Canadian-sourced gas, RG&E will ship 453.2 $10^3 \text{ m}^3/\text{d}$ (16.0 MMcf/d) of U.S.-sourced gas as part of the total transit volumes.

With respect to the long-haul volumes, RG&E has entered into a gas sales contract with Unigas Corporation ("Unigas") for 453.2 $10^3 \text{ m}^3/\text{d}$ (16.0 MMcf/d) of Canadian-sourced gas to be transported via the TransCanada system from Empress, Alberta to the Chippawa, Ontario export point. RG&E expected that this gas would be exported at a 90 percent load factor.

In its Reasons for Decision, GH-5-89, April 1991, the Board granted Unigas a licence to export 453.2 $10^3 \text{ m}^3/\text{d}$ (16.0 MMcf/d) for a ten-year term commencing on the date of first delivery.

RG&E noted that it currently has negotiations under way with several U.S. producers to purchase 2 875.3 $10^3 \text{ m}^3/\text{d}$ (101.5 MMcf/d) of gas commencing 1 November 1991, and an additional 1 558.0 $10^3 \text{ m}^3/\text{d}$ (55.0 MMcf/d) in each of the years commencing 1 November 1992 and 1 November 1993. RG&E also indicated that all, or a portion, of these latter, "step-up" volumes could be purchased in Canada.

RG&E advised that the transit gas volumes were forecast to flow at a 22 to 25 percent load factor.

By application dated 8 January 1991, RG&E applied to the Board, pursuant to section 116 of the Act, for an order, or orders, permitting the import into Canada at Sarnia, Ontario and the subsequent export at Chippawa, Ontario of a daily transit volume of up to 5 991.3 $10^3 \text{ m}^3/\text{d}$ (211.5 MMcf/d) commencing 1 November 1991. The total transit volume is comprised of the 2 875.3 $10^3 \text{ m}^3/\text{d}$ (101.5 MMcf/d) of service beginning 1 November 1991, plus two subsequent volume increases of 1 558.0 $10^3 \text{ m}^3/\text{d}$ (55.0 MMcf/d) each beginning 1 November 1992 and 1 November 1993.

By Opinion and Order No. 485, dated 19 March 1991, the U.S. Department of Energy, Office of Fossil Energy ("DOE/FE") granted RG&E authorization to export to Canada and to import back into the U.S. 6 444.6 $10^3 \text{ m}^3/\text{d}$ (227.5 MMcf/d) of gas over a 15-year period. RG&E's U.S. import authorization with respect to the 453.2 $10^3 \text{ m}^3/\text{d}$ (16.0 MMcf/d) of Canadian-sourced

gas it has contracted to purchase from Unigas is still pending.

RG&E submitted that, notwithstanding the replacement nature of the gas proposed to be exported via the Blackhorse Extension, there would be a steady 1 to 1.5 percent annual load growth in its franchise area. A ten-year gas supply/demand forecast was provided showing that annual gas consumption would increase 9.6 percent over ten years from a forecast $1\ 473.0\ 10^6\text{m}^3$ (52 Bcf) in 1991 to $1\ 614.7\ 10^6\text{m}^3$ (57 Bcf) in 2000. The commercial sector is projected to experience the greatest growth, followed by the residential sector.

RG&E's evidence showed that its peak day requirements, net of transportation service, would increase from approximately $12\ 464.0\ 10^3\text{m}^3/\text{d}$ (440.0 MMcf/d) in 1991/92 to $13\ 569.0\ 10^3\text{m}^3$ (479.0 MMcf/d) in 1999-2000. At the same time, RG&E is forecasting that its reliance on CNG (i.e. for sales and firm transportation and storage services) will decrease from $8\ 753.0\ 10^3\text{m}^3/\text{d}$ (309.0 MMcf/d) in 1991/92 to $6\ 402.0\ 10^3\text{m}^3/\text{d}$ (226.0 MMcf/d) in 1999/2000. To offset its intended reduced dependence on CNG, RG&E's reliance on other supply sources is forecast to increase from $3\ 683.0\ 10^3\text{m}^3/\text{d}$ (130.0 MMcf/d) in 1991-92 to $7\ 167.0\ 10^3\text{m}^3/\text{d}$ (253.0 MMcf/d) in 1999-2000.

RG&E submitted that its ability to absorb the gas to be transported via the Blackhorse Extension is not dependent upon incremental demand. However, RG&E argued that the increased competition that the new Blackhorse Extension and Empire facilities would create in western New York may stimulate gas demand and render its long-term projections conservative. RG&E felt that its customers represented an established, stable market for the gas to be shipped via the proposed Blackhorse Extension.

2.2 Cogeneration Markets

In addition to transporting the RG&E volumes, the Blackhorse Extension is also intended to provide service to five export shippers at Chippawa, Ontario, whose markets and export licence applications were considered by the Board in its GH-5-89 proceedings. In all cases, Canadian-sourced gas would be transported from Western Canada to the Chippawa, Ontario export point via the TransCanada system. The Board's findings in this regard are found in its Reasons for Decision, TransCanada PipeLines Limited, GH-5-89, April 1991. In summary, the Board has issued export licences to the following cogeneration shippers:

Table 2-2
Licensed Cogeneration Shippers

Licensee	Authorized Maximum Daily Quantity (10^3m^3) (MMcf)	Downstream Transportation	Cogeneration Facility	Expected Start-Up Date of Cogen Facility
Encogen	424.9	15.0	Empire / NFG	Buffalo, N.Y.
Fulton	326.2	11.5	Empire / Niagara Mohawk	1 May 91
Indeck-Corinth	459.0	16.2	Empire / NFG / CNG	1 Nov 92
Indeck-Ilion	210.0	7.4	Niagara Mohawk	
Kamine	402.3	14.2	Empire / NFG / CNG	1 Nov 92
Carthage		Niagara Mohawk	Ilion, N.Y.	
Total	1 822.4	64.3	Empire / Niagara Mohawk	Carthage, N.Y.
				1 Sep 91

Enserch Development Corporation ("Enserch") provided a project status report which showed that the Encogen cogeneration facility is currently under construction and that the plant's in-service date is still expected to be 1 November 1992. Fulton indicated that its cogeneration facility is completed and that it is expected to be in full commercial operation by 1 May 1991. Indeck-Corinth and Indeck-IIion submitted that their major plant equipment was expected to be in place by May 1991, and that actual start-up and testing of their facilities is anticipated by 1 November 1992. Kamine indicated that its cogeneration plant would be completed by 22 July 1991 and would be in full operation before 1 September 1991.

2.3 Overall Gas Market Requirements

TransCanada noted that evidence presented by St. Clair together with the findings of the New York State Public Service Commission ("NYSPSC") in Opinion 91-3, dated 1 March 1991, granting Empire a Certificate of Environmental Compatibility and Public Need demonstrate the adequacy of the western and central upstate New York market to ensure long-term use of the Blackhorse/Empire facilities.

St. Clair, a participant in the Empire project, indicated that the Empire system will serve the western and central upstate regions of New York, an area having a population of 3.6 million people and housing 27 percent of New York State's energy-intensive manufacturing industries.

St. Clair indicated that the Empire system will pass through various cities and towns, including the metropolitan areas of Buffalo, Rochester and Syracuse and that, in addition to serving RG&E, the Empire system will be located in the vicinity of four other New York State local distribution company's ("LDC's")¹.

St. Clair expected that the traditional market requirements of the region to be served by Empire would experience modest growth. Specifically, the residential gas market, which has experienced high gas saturation, will see incremental growth coming from additional customers rather than from conversions.

Industrial requirements are expected to grow modestly. However, substantial potential for gas was forecast in the electric generation market (i.e. for use by the electric utilities, or by various proposed cogeneration projects) which could be served directly off the Empire system, by one of the five LDCs, or by other pipeline systems which could be connected to the Empire system.

By way of illustrating market potential, St. Clair provided a list of eleven shippers who have executed transportation precedent agreements with Empire to ship some 6 147.0 $10^3 \text{ m}^3/\text{d}$ (217.0 MMcf/d) of gas commencing 1 November 1993. The gas to be shipped would be either Canadian or U.S.-sourced and the proposed markets to be served a mixture of industrial and cogeneration markets.

St. Clair noted that although these additional shippers were not included in the volumes underlying the Blackhorse section 58 application, these potential requirements clearly show that there is a current and long-term need for the Empire facilities and thus, the Blackhorse Extension.

St. Clair forecast that the overall market has enormous potential. Specifically, the region's gas requirements could increase by at least 50 percent by the turn of the century, largely on the strength of the incremental gas demand for cogeneration, estimated at 3 824.3 10^6 m^3 (135 Bcf per year) by the mid-1990's. Another 1 416.4 10^6 m^3 (50 Bcf per year) was identified as incremental gas use by electric utilities.

TransCanada, RG&E and St. Clair submitted that, with the exception of CNG who labelled the markets "suspect", all other interested parties were in virtual agreement that the western and central New York State market to be served by the Blackhorse/Empire facilities are attractive and support the need for the applied-for Blackhorse facilities.

2.4 Views of Interested Parties

ANR submitted that, while the RG&E volumes are key in underpinning the Blackhorse facilities in the initial years of its operation, the pipeline could serve other shippers, including other Canadian export shippers, (e.g. the cogeneration shippers). ANR added that once the

Blackhorse/Empire facilities are in place, other U.S. LDCs may use these facilities in planning their gas supply portfolios and thus, provide additional opportunities for Canadian gas producers.

CNG noted that the Blackhorse/Empire project involves the displacement or replacement of a current gas supply arrangement that serves a traditional market which may experience only modest growth. CNG added that the potential cogeneration demand in the New York State market that could be served via the Blackhorse Extension is highly speculative at this time. CNG concluded that such potential markets could be served by existing or future U.S. pipeline facilities.

CNG submitted that it has served RG&E and Niagara Mohawk Power Corporation ("Niagara Mohawk") and is, therefore, familiar with these gas markets as well as those of the other New York State LDCs. CNG believes that RG&E's traditional market demand will be highly seasonal and will experience low load factors in the order of 32 percent. CNG added that it has proposals before the (United States) Federal Energy Regulatory Commission ("FERC"), both individually and jointly with other pipelines, to allow it to compete for and to serve a number of incremental industrial projects, principally cogeneration projects, in the markets which would be served by RG&E/Empire.

CNG indicated that it has undertaken steps to ensure that it is in a position to offer competitive service to those customers. Specifically, CNG noted that, under service restructuring arrangements with all of its sales customers, including RG&E, it has proposed making available to those customers certain upstream pipeline capacity currently held by CNG, thus permitting those customers direct access to gas supplies at the wellhead. CNG has also proposed a package of firm storage, transportation and sales service agreements, and has applied to the FERC for approval of several initiatives with respect to toll design and tariff-related matters.

CNG argued that, notwithstanding the aforementioned CNG/RG&E gas supply agreements, CNG has an ongoing commitment to

serve RG&E and that it has the necessary gas supply available to satisfy that commitment. CNG submitted that RG&E's future gas supply portfolio is not tied to the fate of the Blackhorse Extension. CNG noted that RG&E had not yet given notice to CNG of its intention to exercise its right to reduce its peak day obligation to CNG by up to $3\ 328.5\ 10^3\text{m}^3/\text{d}$ (117.5 MMcf/d). Such notice was to have been given by 1 February 1991. CNG submitted that RG&E's compliance with this provision is fundamental to RG&E's unequivocal commitment to take gas via Blackhorse and to pay the associated demand charges.

The Independent Petroleum Association of Canada ("IPAC") did not dispute the evidence that RG&E's market will remain stable and grow at a reasonable rate. In addition, IPAC submitted that the new cogeneration projects that could be served by the Blackhorse/Empire interconnection, largely with Canadian-sourced gas, appear promising as an important new market in New York State. In conclusion, IPAC argued that, while these new export markets are attractive, they must be served in a timely manner since any delay would cause these markets to look to alternative gas supplies.

Unigas indicated that it has entered into a ten-year gas sales agreement with RG&E for the delivery of $453.2\ 10^3\text{m}^3/\text{d}$ (16.0 MMcf/d) of gas purchased from Mark Resources Inc. via the Blackhorse Extension. Unigas submitted that RG&E will purchase this gas at close to 100 percent load factor and at not less than 90 percent.

Union argued that, as a transporter of the RG&E volumes, it has already satisfied itself with respect to the existence of the markets proposed to be served by the Blackhorse Extension.

In responding to CNG's argument that RG&E had not complied with the 1 February 1991 notification deadline, RG&E advised that it had sent a notice to CNG on 31 January 1991 of its intention to exercise its right to reduce its peak day obligations to CNG by up to $3\ 328.5\ 10^3\text{m}^3/\text{d}$ (117.5 MMcf/d). RG&E added that there has been correspondence with CNG since that time in an effort to settle their differences and to establish new deadlines as required. In this

regard, RG&E argued that it has made commitments to Empire, to TransCanada, and in respect of other upstream transportation and storage service arrangements that are not conditional upon the reduction in its peak day obligations to CNG.

1 National Fuel Gas Distribution
Company

New York State Electric and Gas Corp.
Niagara Mohawk Power Corp.
Syracuse Suburban Gas Company

Contracts and Financial Assurances

3.1 Transportation and Storage Service Arrangements

3.1.1 Rochester Gas and Electric Corporation

RG&E has entered into long-term precedent agreements with ANR for the delivery of gas from various U.S. supply basins to ANR's storage facilities near Farwell, Michigan or to the interconnections of the ANR and Great Lakes systems. In addition, RG&E and ANR have executed storage service precedent agreements with respect to the injection and the withdrawal of the gas transported for RG&E by ANR.

The ANR/RG&E transportation and storage service arrangements are summarized in Table 3-1. RG&E indicated that ANR requires no new facilities in order to provide the services specified in these agreements.

RG&E has entered into a precedent agreement for transportation service with Great Lakes in order to effect delivery of the gas from various points on the ANR system to St. Clair, Michigan. RG&E submitted that, to the extent corresponding capacity is available prior to 1 November 1992, it anticipates utilizing that capacity to transport, on an interim basis, the $453.2 \text{ } 10^3 \text{ m}^3/\text{d}$ (16.0 MMcf/d) of U.S.-sourced gas. The Great Lakes/RG&E transportation arrangements are also summarized in Table 3-1. In order to provide this service, Great Lakes recently filed with the United States FERC under section 7(c) of the Natural Gas Act ("NGA") for authorization to construct and operate the required additional capacity. At the time of the hearing, the FERC's decision was pending.

Table 3-1

**RG&E Transportation and Storage Service Arrangements
with U.S. Pipelines**

<u>Pipeline</u>	<u>Type of Service</u>	<u>Date of Precedent Agreement</u>	<u>Daily Volume</u> $10^3 \text{ m}^3 (\text{MMcf})$	<u>Receipt Point</u>	<u>Delivery Point</u>
1. ANR	Firm Transportation (Southwest Area)	6 Feb.'90, as amended by Amending Agreement dated 12 March '91	1 201.0 (42.4)	Various U.S. supply regions	ANR, Michigan gas storage facilities and GLGT at Farwell
2. ANR	Firm Transportation (Southeast Line)	1 Feb.'90	1 841.0 (65.0)	Various U.S. supply regions	ANR, Michigan gas storage facilities and GLGT at Farwell
3. ANR	Gas Storage	1 Mar.'91	(a) 1 190.0 (42.0) (b) 4 325.7 (152.7)		
4. GLGT	1-Firm Transportation	30 Jan.'90	2 903.6 (102.5)	Farwell, Capac	St. Clair, and Mutton- Michigan ville,
	2-Firm Transportation	2 Apr.'91	1 558.0 (55.0)		Michigan
5. Empire	Firm Transportation	7 May'90	(c)	Niagara Falls, New York	Various points in New York State
(a)	Injection				
(b)	Withdrawal				
(c)	Not less than:	(i) in the first contract year 3 328.5 $10^3 \text{ m}^3/\text{d}$ (117.5 MMcf/d) (ii) in the second contract year 4 249.2 $10^3 \text{ m}^3/\text{d}$ (150.0 MMcf/d) (iii) in the third contract year 6 138.6 $10^3 \text{ m}^3/\text{d}$ (216.7 MMcf/d)			

Table 3-2

**RG&E Transportation Service Arrangements
with Canadian Pipelines**

<u>Pipeline Type of Service</u>	<u>Date of Precedent Agreement</u>	<u>Daily Volume Point</u> (10^3 m^3) (MMcf)	<u>Receipt Point</u>	<u>Delivery Point</u>
1. TCPL Firm Transportation	28 Dec.'90	2 875.3 101.5	Sarnia, Ont.	Chippawa, Ont.
2. TCPL Firm Transportation as amended by Amending Agreement dated 28 Dec.'90	5 Oct.'90	453.2 16.0	Sarnia, Ont.	Chippawa, Ont.
3. TCPL Firm Transportation	28 Dec.'90	1 558.0 55.0	Sarnia, Ont.	Chippawa, Ont.
4. Union Firm Transportation	27 Aug.'90	2 875.3 101.5	Dawn, Ont.	Kirkwall, Ont.

RG&E and Empire have entered into a 15-year amended and restated precedent agreement for the receipt and delivery of 2 875.3 $10^3 \text{ m}^3/\text{d}$ (101.5 MMcf/d) in the first year of service and increasing to 6 138.6 $10^3 \text{ m}^3/\text{d}$ (216.7 MMcf/d) by the third year (see Table 3-1). In this regard, Empire has applied to the FERC for a Presidential Permit to connect its proposed facilities with the Blackhorse Extension at a point on the U.S./Canada border near Grand Island, New York. Empire has also applied to the FERC under section 3 of the NGA for authorization to construct, operate and maintain facilities at the point of entry for the importation of natural gas. At the time of the Board's hearing, the FERC's decision was pending.

Empire also applied to the NYSPSC pursuant to Article VII of the Public Service Law, for a Certificate of Environmental Compatibility and Public Need to construct an intrastate gas pipeline extending from the Canadian border to a point near Syracuse, New York. Empire's application included a proposed tariff setting forth terms and conditions of service. In Opinion No. 91-3 issued 1 March 1991, the NYSPSC granted Empire authorization to construct and operate the facility.

RG&E has entered into transportation service precedent agreements and amending agreements with TransCanada for the delivery of 3 328.5 $10^3 \text{ m}^3/\text{d}$ (117.5 MMcf/d), commencing 1 November 1991, from the St. Clair/Sarnia, Ontario receipt point to the export point at Chippawa, Ontario. In addition, RG&E has entered into a transportation service precedent agreement with TransCanada for the delivery of an additional 1 558.0 $10^3 \text{ m}^3/\text{d}$ (55.0 MMcf/d) commencing 1 November 1992. These arrangements are summarized in Table 3-2. The precedent agreement associated with the delivery of 453.2 $10^3 \text{ m}^3/\text{d}$ (16.0 MMcf/d) terminates upon the availability of the Canadian-sourced gas purchased from Unigas (i.e. the long-haul gas) and the execution of a long-haul service agreement between TransCanada and RG&E.

The long-haul, Unigas volume of 453.2 $10^3 \text{ m}^3/\text{d}$ (16.0 MMcf/d) was the subject of RG&E's section 71(2) and (3) application, heard by the Board in the GH-5-89 proceedings¹.

1 RG&E's section 71 application was denied by the Board in its Reasons for Decision GH-5-89, Volume 3.

RG&E noted that, notwithstanding the Board's denial of its section 71 application, it was pursuing alternative means (e.g. through a capacity assignment) of transporting the Canadian-sourced gas to its franchise area by the 1991 in-service date and that it had already received at least one offer of ample capacity. RG&E expressed confidence that such an alternative transportation arrangement could be put in place.

Union and RG&E have executed a 15-year transportation service contract and amending agreement, dated 27 August 1990, for the delivery of $2\ 875.3\ 10^3\text{m}^3/\text{d}$ (101.5 MMcf/d) from Dawn to Kirkwall, Ontario. In this regard, TransCanada indicated that the Ontario Energy Board ("OEB"), in its decision of 16 April 1991, issued leave to Union to construct facilities to transport the initial RG&E transit volume of $2\ 875.3\ 10^3\text{m}^3/\text{d}$ (101.5 MMcf/d). The OEB's approval is conditional upon receipt of all relevant U.S. and Canadian regulatory approvals necessary for the shipment of the RG&E volumes.

RG&E, TransCanada and Union have entered into an assignment agreement by which RG&E assigns to TransCanada, in accordance with the aforementioned Union/RG&E transportation service contract and amending agreement, RG&E's firm service entitlement on the Union system equal to $2\ 875.3\ 10^3\text{m}^3$ (101.5 MMcf/d).

TransCanada explained that the assignment agreement was entered into so that TransCanada would have sufficient capacity entitlement on the Union system to enable it to effect the firm transportation service for RG&E. TransCanada indicated that at the time it filed its original Blackhorse Extension application, its transportation service for RG&E was contemplated to be from Kirkwall, Ontario to Chippawa, Ontario. RG&E would have been responsible for making the gas available at Kirkwall, Ontario. RG&E subsequently refined its transportation requirements and changed the receipt location to TransCanada's interconnection with Great Lakes at the St. Clair River. TransCanada submitted that, because it did not itself have sufficient capacity on the Union system to accommodate RG&E's change from the Kirkwall receipt point to the St. Clair River

receipt point and since RG&E already had pursued such arrangements with Union, an assignment to TransCanada of RG&E's rights to such service during the period that TransCanada would provide equivalent service to RG&E was proposed.

The assignment agreement provides that, during the period that TransCanada is obligated to provide RG&E with $2\ 875.3\ 10^3\text{m}^3/\text{d}$ (101.5 MMcf/d) of transportation, TransCanada will be the party contracted to Union for an equivalent level of service on the Union system between Dawn and Kirkwall, Ontario. However, if, after ten years, RG&E elects a reduction in TransCanada transportation service, it is at TransCanada's discretion whether to contract with Union for anything more than the service that TransCanada is obligated to provide RG&E. RG&E would, however, remain responsible to Union for payment of the demand charges on the contracted capacity not utilized by TransCanada. Figure 3-1 illustrates the location of the Union system in relation to the Sarnia to Kirkwall transportation route.

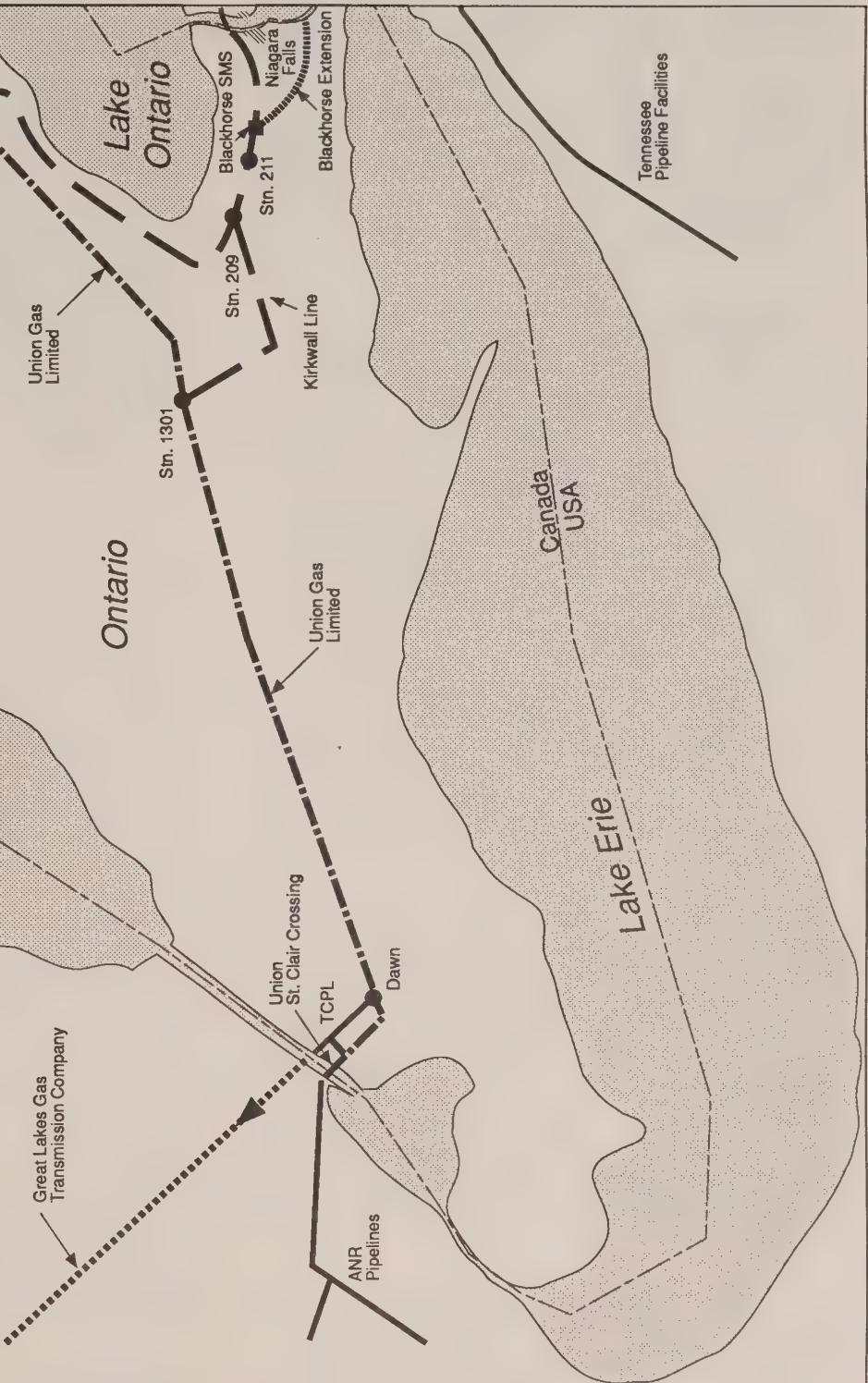
TransCanada concluded that RG&E remains responsible to Union for any level of service between the $2\ 875.3\ 10^3\text{m}^3/\text{d}$ (101.5 MMcf/d) and TransCanada's portion for the remaining term of the Union contract, thereby providing an incentive to RG&E not to reduce its contract with TransCanada.

RG&E noted that all of its transportation service agreements are for 15-year terms and, with the exception of the Union agreement, contain a provision for a step-down commencing with the eleventh contract year. Under the step-down provisions, RG&E may reduce its volume entitlement by 20 percent per year. RG&E advised that the step-down provision would accord it the flexibility to pursue other supply and transportation options after the tenth year if such options were found to be attractive. RG&E argued that it has no present intention to exercise its rights under the step-down provision and that it is equally likely that it would seek to increase and extend those service requirements.

TransCanada advised that there are, at this time, no specific markets or prospective shippers in its queue to which capacity could be allocated in the event RG&E elected to

Figure 3-1

Union/TransCanada Facilities



exercise the step-down option. TransCanada added that, to the extent capacity becomes available, it would offer that capacity in accordance with its queueing procedures to prospective shippers proposing to use the Chippawa, Ontario export point, or to those proposing to use the Niagara Falls, Ontario export point if sufficient capacity were available between the Blackhorse junction and Niagara Falls, Ontario.

3.1.2 Cogeneration Shippers

TransCanada has entered into precedent agreements with each of the five cogeneration shippers for the transportation of Alberta and Saskatchewan sourced gas to the Chippawa, Ontario delivery point.

TransCanada submitted that, with the exception of Indeck-Corinth, all necessary transportation service precedent agreements for service on the TransCanada system and for service upstream and downstream of the TransCanada system are in place. TransCanada noted that Indeck-Corinth is finalizing its transportation arrangements with CNG and Niagara Mohawk for transportation service downstream of the proposed Empire/NFG interconnection. TransCanada added that its transportation service precedent agreements with each of the cogeneration shippers provide for 15 years service via the Blackhorse Extension.

A project status report provided by Encogen indicated that, in the event service by Empire is unavailable by 1 November 1991, no interim gas supply or transportation measures are required or contemplated since the projected in-service date of its cogeneration facility is 1 November 1992. Encogen added that, in the event the Canadian and U.S. facilities are not in place by that date and the Canadian-sourced gas is unavailable, it would obtain U.S. gas from an affiliate of Enserch, the cogeneration plant developer.

Fulton indicated that its cogeneration facility is expected to be in operation by 1 May 1991 and, assuming that the Empire facilities will not be in place by 1 November 1991, it has arranged to transport the gas to its cogeneration facility through various diversions on U.S. pipeline systems. In the event the upstream

TransCanada capacity is unavailable by 1 May 1991, Fulton intends to use both TransCanada capacity already assigned to it and diversions to ship the gas from Empress, Alberta to Niagara Falls, Ontario.

Indeck-Corinth and Indeck-IIlion both submitted that, in the event service by Empire is unavailable by 1 November 1991, no interim gas supply or transportation service arrangements are required or contemplated since a gas supply would be available from Indeck's existing portfolio of long and short-term gas purchases and transportation services. In the event the Blackhorse Extension is not in place by the 1 November 1992 (the start-up date of the cogeneration facilities), Indeck would utilize an alternate NFG service arrangement and have the gas delivered to the Niagara Falls, Ontario export point.

Kamine indicated that its cogeneration plant is expected to be operational by 1 September 1991 and, assuming the Empire facilities will not be in place by that date, it is concluding transportation service arrangements on the TransCanada system through an assignment of capacity to the Eastern Zone and through a diversion to the Niagara Falls, Ontario export point. Kamine added that, in the event the necessary pipeline facilities to the proposed Chippawa export point are denied, it has an alternative supply arrangement with Coastal Corporation utilizing the Niagara Falls, Ontario export point.

NFG submitted that it has executed precedent agreements and has agreed to provide firm downstream transportation service for three of the cogeneration shippers; namely, Encogen, Indeck-IIlion and Indeck-Corinth. The volume for Encogen will be transported to NFG, for redelivery to Encogen's Buffalo, N.Y. cogeneration facility. The Indeck-IIlion and Indeck-Corinth volumes will be delivered by NFG to CNG for redelivery by Niagara Mohawk to Indeck's proposed cogeneration facilities in Ilion and Corinth, New York. The remaining two cogeneration shippers (i.e. Fulton and Kamine) have arranged with Niagara Mohawk for transportation service immediately downstream of the Empire system.

3.2 Financial Assurances

TransCanada submitted that its financial exhibits and evidence adopted by reference from the GH-5-89 proceedings, together with its 1990 Annual Report, demonstrated its solid financial condition and competence to carry out the applied-for facilities program.

With respect to RG&E, TransCanada pointed out that RG&E is a long-established, financially solid utility, as demonstrated through its 1990 Annual Report and that, as such, it was not required to give TransCanada any credit assurances. TransCanada submitted that RG&E's signature on the precedent agreements provides TransCanada with sufficient financial assurances.

With regard to the cogeneration projects, TransCanada pointed out that it has obtained a performance agreement on financial assurances in accordance with which each of the cogeneration shippers has undertaken to provide TransCanada, prior to executing a Firm Service ("FS") contract, a letter of credit, or some other instrument equivalent to one year of demand charges. In addition, in those cases where the shipper is not the owner of the cogeneration facility, the cogeneration facility owner is to become a co-signator to the TransCanada FS contract.

RG&E argued that it has the necessary resources to fulfill its contractual obligations to pay the transportation demand charges associated with the proposed facilities.

3.3 Views of Interested Parties

With respect to transportation arrangements both upstream and downstream of Blackhorse, CNG submitted that a number of authorizations must be received and construction must be completed in order for service to be provided by 1 November 1991. Specifically, CNG noted that the FERC must authorize Empire's application for a Presidential Permit and for authority to construct and operate border facilities pursuant to Section 3 of the NGA. In addition, an application by Great Lakes to expand its facilities to deliver the RG&E transit

volumes is also pending before the FERC. CNG argued that no meaningful evidence had been submitted which would indicate that this latter authorization would be granted in time to meet a 1 November 1991 in-service date.

Regarding financial assurances, CNG argued that the issue is not whether RG&E is capable of paying the associated demand charges but rather the level of commitment by this key Blackhorse shipper to ensuring that the facilities would be economically feasible. CNG noted several areas of concern including the step-down provisions in each of the related transportation contracts; the low load factor at which RG&E will take the transit volumes; and the degree of competition that would be created in the end market by displacement or replacement of existing supplies.

In reply, RG&E reiterated assurances that it was in a position to pay demand charges on the Blackhorse Extension and foresaw no circumstances under which the step-down provision would be exercised. TransCanada noted that load factor will have no effect on recovery of demand charges. RG&E is committed to pay the total demand charge to TransCanada, regardless of the level of take.

Supply Matters

4

Supply Matters

In considering TransCanada's application, the Board examined two aspects of supply:

- project-specific supply; and
- overall supply.

Project-specific supply refers to the supply supporting the requests for service associated with the proposed extension. In this regard, the Board examined whether each shipper had secured or would secure adequate supply to meet its obligations.

Overall supply refers to the total supply of natural gas that would be made available to the proposed facilities. In this respect, the Board considered whether there would be adequate gas supply to keep the pipeline fully utilized over its economic life.

4.1 Project-Specific Supply

There are two distinct types of FS requirements supporting the proposed Blackhorse Extension:

- new exports (licensed in GH-5-89); and
- RG&E transit volumes.

With respect to new exports (the cogeneration shippers and Unigas volumes), the Board did not consider it necessary to re-examine the project-specific supply for those volumes as they had recently been approved for export in the GH-5-89 proceeding.

The RG&E transit volumes make up $3.3 \cdot 10^6 \text{ m}^3/\text{d}$ (117.5 MMcf/d) of the approximately

$4.1 \cdot 10^6 \text{ m}^3/\text{d}$ (144 MMcf/d) proposed to be moved on the Blackhorse Extension in the first year.

TransCanada indicated that, even though there were no executed long-term supply arrangements in place for RG&E, it had accepted the firm transportation and storage agreements as a proxy for long-term supply. TransCanada submitted that the pooling of gas purchases into storage was a mechanism by which the source of gas production could be moved closer to the market and that the dispatchability allowed for in the storage contracts was, in essence, the available gas deliverability. Further, TransCanada stated that it considers RG&E to be a creditworthy LDC that would pay the demand charges for TransCanada's services. TransCanada indicated it expected executed gas supply contracts to be in place before construction started.

RG&E indicated that it was in the process of developing a portfolio of suppliers in order to build strength, diversity and varying levels of risk into its gas supply. RG&E expected that its supply portfolio would consist predominantly of long-term supplies, with only ten percent ultimately purchased on the spot market. It had approached several gas suppliers to seek long-term gas supply contracts (i.e. three to ten years) and provided letters from five potential suppliers indicating an interest in signing long-term contracts with RG&E. However no long-term purchases are yet in place.

In acknowledging that its long-term supply arrangements are not yet in place, RG&E also noted that the "practical business reality" of transportation and storage gives the Board the assurance necessary to authorize construction of the Blackhorse Extension. Specifically, RG&E argued that its storage and transportation arrangements constitute a valid "proxy" for long-term supply because:

- the arrangements involve firm, quality service;
- RG&E has, through its responsibility for paying demand charges, a strong incentive to use the facilities; and
- the large volume transit supply will support substantial demand charges for a relatively small expansion.

RG&E indicated that it had begun injecting gas into ANR storage as of 15 April 1991. If the Blackhorse Extension were not approved, RG&E's options would be to leave the gas in storage, seek an alternate buyer for the gas or attempt to deliver the gas to its franchise area via interruptible transportation.

4.2 Overall Supply

With regard to overall supply, TransCanada relied upon the Sproule study "The Future Natural Gas Supply Capability of the Western Canadian Sedimentary Basin" submitted during the GH-5-89 proceeding and incorporated into the GH-1-91 proceedings. That study provided a projection of the natural gas supply that could be expected to be available from the Western Canadian Sedimentary Basin, given particular natural gas demand and price assumptions.

St. Clair presented evidence based on Energy Information Administration estimates of proved reserves in the Lower 48 states and the Potential Gas Committee estimates of undiscovered potential for the same areas indicating that, in addition to the Canadian volumes proposed to flow to the RG&E markets, there was adequate U.S. natural gas supply available for contracting to potential shippers using the Blackhorse-Empire pipeline systems.

4.3 Views of Interested Parties

CNG argued that RG&E did not warrant preferred treatment in respect of the requirement to demonstrate project-specific supply on the basis of the character of the service and the capital cost of facilities. CNG stated that the creditworthiness of RG&E was irrelevant because

this was a requirement to be met by all shippers on the TransCanada system. CNG pointed out that RG&E had not committed itself to a single long-term gas contract and in fact had yet to provide anything of consequence with regard to project-specific supply. CNG argued that TransCanada's contention that long-term storage and transportation arrangements could act as a proxy for long-term supply contracts was without merit. CNG further submitted that TransCanada's examination of RG&E's storage proxy was limited and incomplete and that TransCanada itself had argued that storage is only as good as the gas supply behind it.

The Alberta Petroleum Marketing Commission ("APMC") believed that project-specific supply should be represented by long-term gas supply contracts and urged the Board to proceed with caution when considering the issue of storage and transportation contracts as a proxy for long-term supply contracts. IPAC was of the view that RG&E's project-specific supply for its transit volumes was less satisfactory than the arrangements in place for Canadian-sourced gas. IPAC noted that, although RG&E had been working on alternative gas supplies and diversification of suppliers for some time, it was unable to provide project-specific gas supply contracts, except for the Unigas volumes.

In reply argument RG&E submitted that, given the number of potential shippers it was dealing with, it was not surprising that supply arrangements had not been concluded. RG&E's intention was to wait until it had received proposals from all potential shippers and then to go forward and execute contracts in a consistent and organized manner.

No interveners challenged the evidence submitted in support of overall supply.

Chapter 5

Land Matters

5.1 Early Public Notification

During 1990, the Board released its Memorandum of Guidance dealing with early public notification of proposed energy projects. The intent of that Memorandum of Guidance was to provide for public input during the planning and development stage of projects which could then be incorporated into applications to the Board. It was anticipated that providing early public notification of proposed applications and timely public input would improve the Board's regulatory process.

TransCanada initiated its notification program in respect of the Blackhorse Extension in early June, 1989. Initial contacts were by telephone, letters and site visits. Letters describing the proposed project were sent to all landowners along the proposed route, to local, provincial and federal government agencies, and to community and special interest groups. These parties were invited to participate in the route selection and environmental assessment process. As a follow-up to its initial contacts, TransCanada, in August 1989, sent letters to all landowners further describing the project and attaching a map of the proposed route.

In early September 1989, TransCanada filed its Route Selection Study with the Board. Copies of that report were also sent to members of the Ontario Pipeline Coordination Committee ("OPCC"), government agencies, and special interest groups. Comments received from those groups were incorporated into the Environmental and Socioeconomic Impact Assessment Report ("Assessment Report"). The Assessment Report was sent to the aforementioned groups in early October 1989 for comment.

To further advise the general public of its application, TransCanada placed notices in the *St. Catherines Standard* describing the Blackhorse Extension project and inviting

members of the public to an open house on 2 November 1989. Some 24 landowners attended that open house.

Between October 1990 and the start of the GH-1-91 Hearing, TransCanada continued to contact landowners and interested parties, and was successful in obtaining survey consents from all but one of the potentially affected landowners, that landowner being a resident of another country.

5.2 Route Selection Criteria

TransCanada's application describes the process used to identify, evaluate and compare alternative routes for the proposed Blackhorse Extension. The major objective of the alternative route generation study was to select a general pipeline route location that would satisfy the requirements of the Board. This was accomplished by:

- establishing a study area;
- generating alternative route locations within the study area;
- evaluating each alternate with respect to its impact on the natural, man-made and social environments; and
- recommending a preferred route.

5.3 Route Selection Methodology

TransCanada indicated that it used a phased approach to establish the proposed route for the Blackhorse Extension. This approach involved:

- determination of the major environmental constraints;
- identification of alternative routes;
- evaluation of all alternative routes; and

- selection of the preferred pipeline route.

In evaluating the alternative routes and selecting a preferred route, TransCanada used the 18 evaluation criteria listed in Appendix A.

Each alternative route was measured against the criteria relevant to the study area. These constraints were classed as being either natural or man-made, and were applied to each of the alternative routes to determine the extent of the potential environmental impacts resulting from the construction of a natural gas pipeline. The constraints identified relate to:

- future urban growth areas;
- future potential landfill areas;
- future industrial areas;
- Environmentally Sensitive Areas ("ESAs");
- river and stream crossing locations; and
- archaeological and heritage resources.

Several interveners submitted that the Canadian landfall had been determined by Empire's preferred landfall on Grand Island, New York. Tennessee was of the view that TransCanada's route selection process only involved an exercise of finding an acceptable route from a defined take-off point to a defined landfall on the Niagara River. In final argument, Tennessee submitted that even a minor modification in the crossing point, to avoid constraints on the Canadian side, was impossible because of Empire's commitment to the Grand Island landfall.

5.4 Routing Alternatives

Within the study area, TransCanada identified and evaluated four alternative routes, namely, Alternatives A, A1 (preferred route), B and C (see Figure 5-1). The study area boundaries were established by first determining the two terminal points, i.e. the interconnection with the existing Niagara Line and potential landfalls on the west bank of the Niagara River. TransCanada submitted that the study area encompassed an area within which all reasonable

alternatives between the two terminal points could be considered.

The preferred route follows the existing Ontario Hydro powerline and Provincial Gas pipeline south to where it intersects with the pipeline of Interprovincial Pipeline Limited ("IPL"). The route continues in a southeasterly direction adjacent to the south side of IPL's easement, crossing the Welland River, Grassy Brook, Lyons Creek and Tee Creek. The proposed route alignment then returns to the south side of IPL's easement, east of the Queen Elizabeth Way ("QEW"), and progresses to the west bank and landfall at the Niagara River.

TransCanada indicated that the preferred route maximizes the use of existing corridors, minimizes the potential impact on contaminated sediments in the Welland River, minimizes or avoids impacts on major sensitive natural areas and would have little impact on the future urban expansion areas of the City of Niagara.

5.5 Land Requirements

The Board has had a long-standing concern about the potential impact of land requirements for pipeline construction (fee simple and easements) upon affected landowners. As it has in the past, TransCanada provided the Board with a schematic of the land requirements for the proposed Blackhorse Extension (see Figure 5-2).

(i) Fee Simple Land

A new meter station, called the Chippawa SMS, would be constructed on fee lands which TransCanada intends to purchase. TransCanada had not finalized the exact location of the site but was negotiating the purchase of land from the City of Niagara Falls.

(ii) Easements

TransCanada would acquire a 20.0 m permanent easement for the entire length of the project.

Figure 5-1
TransCanada PipeLines Limited
Alternative Routes

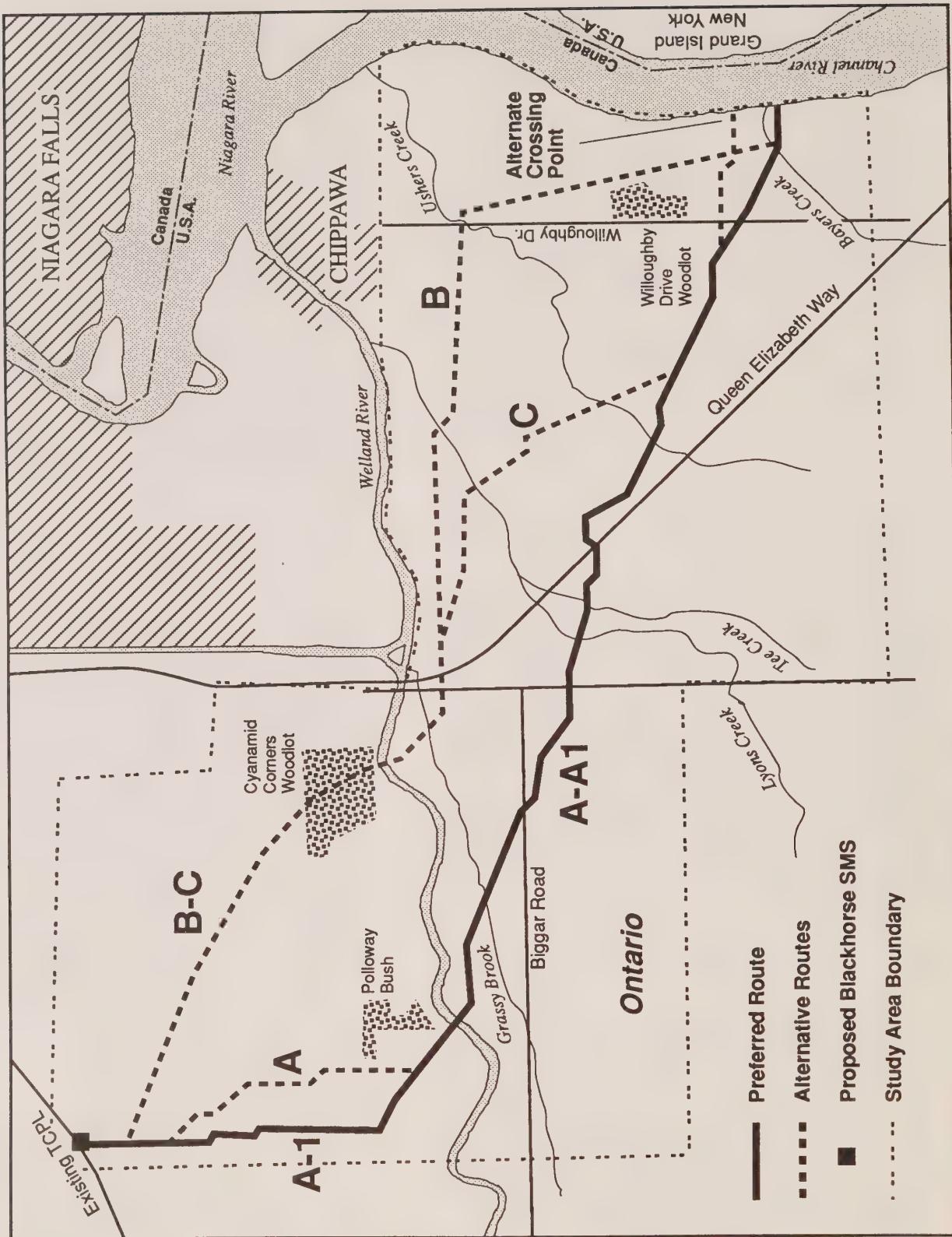
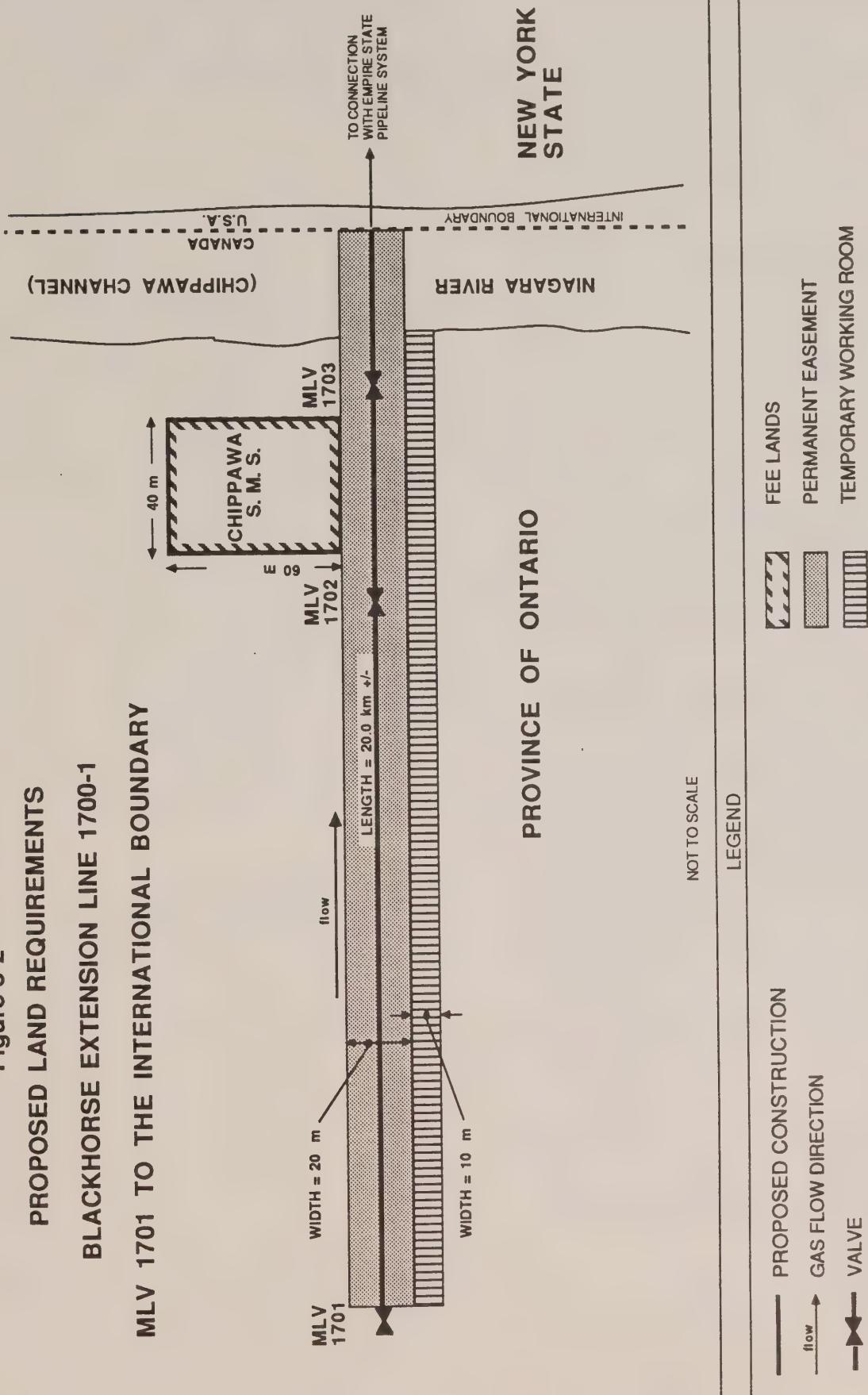


Figure 5-2
PROPOSED LAND REQUIREMENTS

BLACKHORSE EXTENSION LINE 1700-1
MLV 1701 TO THE INTERNATIONAL BOUNDARY



(iii) *Temporary Work Space*

TransCanada requires a 10.0 m width of temporary workspace for machinery movement, for the storage of soil, and to ensure that no environmental or landowner considerations are jeopardized. This is in accordance with TransCanada's Pipeline Construction Specifications (1990).

No interveners challenged the right-of-way requirements.

5.6 Land Acquisition

TransCanada indicated that land acquisition had not commenced, with the exception of an option at the Canadian landfall on the Niagara River. TransCanada's efforts had been directed at familiarizing landowners with the project and obtaining their concurrence on the routing of the right-of-way within their properties.

During the hearing, TransCanada indicated that of the 66 private properties which would be affected by the extension, 21 landowners had signed options. Although TransCanada did not foresee any problems in obtaining options or easements from all of the landowners, it was aware of four or five landowners, including Mr. Rempel, who were opposed to the pipeline.

Environmental and Construction Matters

6.1 Agriculture

The proposed pipeline route would cross agricultural land for most of its length. Given the clay textures and the poor drainage along the route, agricultural impacts would most likely be related to soil compaction and associated alterations in drainage, infiltration and permeability. Such effects could result in crop loss during construction and short-term reduction in crop yield. The proposed construction could also result in nuisance factors such as increased dust and noise and reduced access to cropped lands. TransCanada submitted that access to farm properties and across the pipeline trench would be maintained where required by the landowner. TransCanada further indicated that farmers would be informed of construction schedules in order to aid them in scheduling planting and harvesting. TransCanada concluded that the proposed mitigation techniques would minimize the environmental impacts upon agriculture that could result from construction.

A few interveners expressed concern regarding the potential for effects on soils and significant disruption of agricultural operations. Mr. Helmut Rempel, owner of one of the largest parcels of land along the proposed route, voiced strong opposition to the Blackhorse Extension, with particular concern regarding the diagonal crossing of the proposed route through his property, the effects on his dairy herd, the effects on property values, compensation matters and the general need for the pipeline facilities.

6.2 Niagara River Crossing (Chippawa Channel)

TransCanada's Assessment Report determined that the open-cut or trench method of crossing the Niagara River was feasible, and that the associated environmental impacts would be minor, localized and temporary. Impacts such as

temporary disruption of habitat by trench excavation and noise generation by blasting activities would be unavoidable. TransCanada stated that careful planning and the implementation of good construction practices, as specified in its Environmental Protection Practices Handbook, 1986, and its Pipeline Construction Specifications, 1988, would reduce the overall magnitude of the impacts on the aquatic environment.

After examining the technological advances in the drilling industry and the physical characteristics of the subsurface soils and bedrock at the Chippawa Channel, TransCanada determined that it would be feasible to install the pipeline using the directional drilling technique rather than using the conventional, open-cut installation. The new technique would eliminate all in-stream disruption as well as disturbance of the water column through sedimentation during the construction period.

The directional drilling technique involves drilling a pilot hole on a predetermined arc beneath the river using a slant hole rig together with a down hole motor and various rock bits. Once the pilot hole is completed, the hole is reamed to a size which will accommodate the carrier pipe. The carrier pipe is welded into one or more strings on the opposite site of the river from the drill rig and upon completion of the reaming process is pulled back through the hole to the opposite side of the river.

In its written evidence, TransCanada stated that it had assessed the feasibility and risk of a directionally drilled crossing by considering factors such as subsurface soil conditions, drilled length and pipe diameter.

In order to accurately determine the subsurface conditions at the crossing location, a geotechnical investigation of the site was carried out by Golder and Associates. It was determined

that the river bottom consisted of glacial till deposits underlain by bedrock. The bedrock consists largely of interbedded layers of dolostone, shale and gypsum.

In assessing the feasibility of using the technique, TransCanada studied the experience of other pipeline companies and contacted several drilling contractors who assessed the crossing. All who were contacted indicated that the crossing would be difficult but feasible. To further establish the feasibility of the crossing, TransCanada retained the services of J.D. Hair and Associates Inc., a consulting engineering firm specializing in horizontal drilling. In its report, TransCanada's consultant stated that it believed that directionally controlled horizontal drilling of the crossing was technically feasible. However, it noted that the combination of 610 mm O.D. pipe, 901 metre drilled length and adverse subsurface conditions places the technology required to drill the crossing at, or just beyond the limits of today's state of the art. The consultant cautioned that some developmental effort with associated costs would be required to successfully complete the installation. Further, the consultant stated that the 610 mm O.D. crossing under consideration was not contractually feasible and that he did not believe that a knowledgeable contractor would undertake the crossing for a reasonable lump sum price. TransCanada's consultant noted that a crossing is considered technically feasible, but not contractually feasible, if the techniques exist to install it but the unknowns are such that contractors would require some type of cost-plus or shared-risk contract before undertaking the job. The consultant indicated that, in concluding the crossing was technically feasible, it had to stretch the definition. The consultant noted that opening a hole large enough to accommodate the 610 mm O.D. pipeline over the 901 metre drilled length in the soils present at the site represented a considerable advance over what had been accomplished on past projects and that a significant effort in research and development would be required. The risk that extensive costs would be incurred in field experimentation would be substantial.

Under cross examination by CNG, TransCanada indicated that the consultant's concerns were general in nature. Specifically, TransCanada maintained that when the

consultant referred to adverse subsurface conditions it was referring in a generic way to subsurface conditions such as boulders and cobbles or bedrock with very high compressive strength, which are obstacles to directional drilling. Since these conditions are not present at the actual site, TransCanada felt that the directional drilling of the river was feasible. TransCanada also stated that when its consultant noted that it had stretched the definition of technical feasibility, it was referring to the fact that the technology exists but had not been applied to the particular combination of factors associated with the crossing. Regarding the significant research and development that might be required, TransCanada felt that the consultant was only warning of potential pitfalls that could be encountered, and that adequate planning with respect to equipment selection would avoid unwanted field experimentation and modification of equipment by the contractor.

Concerns were expressed by intervenors regarding the necessary regulatory approvals for a conventional crossing if the drilling technique were to fail. TransCanada indicated that the technology for directionally drilling the crossing exists and that Tennessee is using this method at Lewiston for a crossing involving a large pipe size and roughly the same subsurface conditions. However, if the directional drilling technique were unsuccessful, applications would have to be made to the appropriate Canadian and U.S. regulatory authorities to use the open-cut method described in the Assessment Report.

6.3 Crossings of Other Watercourses

Disturbance to aquatic habitats would result due to in-stream sedimentation and vegetation loss on the banks. The predicted impacts and appropriate mitigation methods for each watercourse were summarized in the Assessment Report. The crossings of the Welland River and Lyons Creek would be of particular concern due to the potential for occurrence of contaminated sediments disturbed during trenching operations. On 17 April 1991, TransCanada amended its Assessment Report, indicating that it would use the directional drilling method to cross the Welland River, Lyons Creek and its tributary. Directional drilling would eliminate the impacts associated with open-cut crossings. In the event that the

directional drilling fails, TransCanada would use the standard, open-cut crossing method and would adhere to the mitigation and restoration procedures outlined in the Assessment Report.

TransCanada and the Ontario Ministry of Natural Resources ("OMNR") have had extensive discussions regarding stream crossings. TransCanada testified that it would provide the OMNR with construction details of all proposed water crossings for the Blackhorse Extension. Details would include recommendations on appropriate crossing techniques, and environmental mitigation and restoration procedures.

6.4 Fisheries

The potential impacts on fisheries along the proposed route could include temporary, high suspended sediment levels, siltation, disturbance or loss of habitat and disturbance of fish during sensitive periods such as spawning. The implementation of measures described in the Assessment Report would mitigate the potential impacts. The use of the directional drilling technique to cross the streams that have contaminated sediments would reduce or eliminate potential impacts.

Restrictions would be placed on the timing of in-stream construction to avoid disturbance to warm-water fisheries during spawning and sensitive development periods. TransCanada also has committed to providing the OMNR with additional information with respect to restrictions on in-stream construction practices and further protection and restoration measures.

6.5 Woodlots

Approximately 20 percent (4 km) of the proposed route would traverse wooded areas. TransCanada outlined mitigative techniques to reduce the potential impacts in wooded areas which include minimizing the workroom width in these areas, protecting specimen trees and, in erosion-prone locations such as steep slopes, implementing rehabilitation measures immediately after pipe installation.

6.6 Archaeological and Heritage Resources

TransCanada submitted preliminary archaeological studies of the proposed route and of the Niagara River crossing. These studies indicated that there was a high potential for uncovering major archaeological and heritage sites.

TransCanada testified that after completing an interim field study, four archaeological sites of significance were documented. It also indicated that it would conduct detailed surveys of the sites and submit a final report to the Board. Should further sites be discovered during construction, TransCanada would follow the recommendations in the archaeological reports and Pipeline Construction Specifications.

6.7 Ontario Pipeline Coordination Committee

TransCanada consulted with the OPCC in order to resolve a number of issues within provincial jurisdiction, and agreed to a number of commitments with respect to the Blackhorse Extension. During the GH-1-91 proceeding, TransCanada submitted a list of six undertakings (Appendix B) intended to address the OPCC's concerns. TransCanada submitted that all of the environmental issues raised by the OPCC had been or would be resolved.

Alternative Proposals to the Blackhorse Extension

7.1 Introduction

In their interventions in respect of the GH-1-91 hearing, both Tennessee and the Canadian Petroleum Association ("CPA") requested that the List of Issues to be examined during the hearing be expanded to include consideration of alternatives to the proposed Blackhorse Extension. Similarly, CNG submitted that the List of Issues should be broad enough to examine the actual need for the Blackhorse Extension, having regard to alternative means of transporting the gas to market.

In response to the concerns of these parties, the Board amended the List of Issues by adding Issue 11, which stated that "...the Board will also examine the economic, environmental and other aspects of alternative means of accessing the U.S. market targeted by the Blackhorse Extension". At the opening of the hearing, the Board indicated that it was its intention in respect of Issue 11 to examine primarily the Canadian portion of alternative means of accessing the targeted market, and not to hear detailed evidence on the U.S. portion of any facilities.

7.2 Alternative Downstream Proposals

Evidence was submitted on the following proposed projects, all of which compete with Empire and have been filed before the FERC:

7.2.1 National Fuel Gas

NFG had originally proposed the construction of 36.2 km (22.5 miles) of pipeline in three segments to eliminate the need for the westernmost 51.5 km (32.0 miles) of Empire's pipeline, including the proposed Niagara River crossing. In September 1990, NFG reached an agreement with Empire whereby NFG would support construction of the Empire facilities and, in addition, would construct 8.7 km (5.4 miles) of

pipeline in two segments to provide firm transportation service, through a back-haul arrangement, of $1.1 \times 10^6 \text{ m}^3/\text{d}$ (38.8 MMcf/d) to three cogeneration facilities: Encogen, Indeck-IIlion and Indeck-Corinth. NFG no longer endorses its original proposal and has requested a withdrawal of its competitive application from before the FERC.

7.2.2 CNG

CNG originally proposed an alternative to the easternmost 196.3 km (122 miles) of the Empire system. That proposal, in conjunction with a portion of the facilities originally proposed by NFG, would completely eliminate the need for the Empire facilities. CNG's proposal entailed 109.4 km (68 miles) of new pipeline and pipeline looping with two new compressor stations and various metering facilities.

In an amendment to its original application to the FERC, CNG filed a proposal to build a 12.1 km (7.5 mile) extension to other proposed facilities which would, in conjunction with the Tennessee proposal described below, also eliminate the need for the Empire facilities. At the time the GH-1-91 hearing concluded, the FERC has not yet rendered its decision on CNG's application.

7.2.3 Tennessee

Tennessee proposed the use of its existing import facilities at Lewiston, New York (adjacent to Niagara, Ontario) in conjunction with capacity which would be made available by installation of additional compression at Lockport, New York, to deliver 256 MMcf/d to Empire at Pendleton, New York. This "Niagara Alternative" would eliminate the need for the Grand Island crossing of the Niagara River, as well as construction of the westernmost 41.8 km (26 miles) of the proposed Empire system. The FERC had also not

yet rendered its decision on Tennessee's application at the time the GH-1-91 hearing concluded.

7.3 The Niagara Alternative

The filing of Tennessee's proposal with the FERC highlighted the option of expanding TransCanada's existing Niagara Line to effect transportation of the required volumes to market.

TransCanada explained that the facilities required to deliver the Empire volumes at Niagara Falls using the Niagara Line would consist of a second 6.3 MW compressor unit at Station 1301 (the same as would be required if the Blackhorse Extension were constructed) and metering facilities at Niagara Falls. TransCanada concluded that there would be no environmental impacts associated with the alternative of using an expanded Niagara Line to transport the Empire volumes.

The amount of compression required at Station 1301 depends on the total downstream demand, i.e. the total of exports at Niagara plus exports at Chippawa. According to TransCanada, one 6.3 MW compressor unit would be required at Station 1301 when export levels reached $21.25 \cdot 10^6 \text{ m}^3/\text{d}$ (750 MMcf/d); a second 6.3 MW unit would be needed when export levels reached $25.5 \cdot 10^6 \text{ m}^3/\text{d}$ (900 MMcf/d). The fully powered capacity of the Niagara Line would be between $36.8 \cdot 10^6 \text{ m}^3/\text{d}$ (1.3 Bcf/d) and $42.4 \cdot 10^6 \text{ m}^3/\text{d}$ (1.5 Bcf/d). TransCanada was of the view that such a level of throughput could be achieved within a short period.

Table 7-1 compares the capital cost of the Blackhorse Extension and associated facilities with the alternative of expanding the Niagara Line. The Blackhorse Extension facilities are estimated to cost \$42.37 million, whereas expanding the Niagara Line would cost \$17.84 million.

TABLE 7-1

Comparison of Estimated Capital Cost of
Alternative Canadian Facilities (\$000, 1991 dollars)

	Blackhorse Extension	Niagara Line Expansion
Pipeline	23 290	---
Compression (portable)	4 380	4 380
Compression	12 710	12 710
Metering	1 990	750
Total Cost	42 370	17 840

7.4 Views of Parties on the Blackhorse Facilities

TransCanada provided the following arguments in support of the Blackhorse Extension:

i) Future Expansibility of the Niagara Line

TransCanada acknowledged that Empire could be served without the construction of a new lateral, by adding compression to the Niagara Line. However, it was argued that this was a short-sighted view. TransCanada submitted that construction of the Blackhorse facilities would preserve expansibility of the Niagara Line. TransCanada felt it was important for environmental reasons to avoid installation of an additional loop on the Niagara Line. In this regard, the Blackhorse Extension would serve as an alternate export conduit, thus obviating the need to expand the Niagara Line through areas which were more environmentally sensitive.

ii) Operational Flexibility and Reliability

TransCanada argued that the construction of the Blackhorse Extension would provide additional security of supply for Canadian producers selling into New York State. In the event of a line outage between Blackhorse and Niagara Falls, Canadian producers could continue to earn revenues on those gas sales to the extent that other arrangements could be made to continue gas sales into New York State. In addition, Blackhorse would provide, at a minimal cost, a new export delivery system competitive with that of Tennessee, with all the attendant benefits that an additional outlet for gas would provide to TransCanada's shippers.

iii) Customer Service Requirements

TransCanada indicated that the location of the crossing of the Niagara River at Grand Island had been determined on the

basis of a service request by Empire. In TransCanada's view, the Blackhorse Extension is the most economic and environmentally efficient means of satisfying Empire's request.

TransCanada concluded that the key element of the Canadian public interest is that the Blackhorse/Empire State facilities combination would provide a new competitive marketing medium for Canadian producers into the upstate New York market and that neither the CNG or Tennessee alternatives could achieve this objective. TransCanada argued that in that circumstance, the fact that Tennessee's alternative has virtually no environmental impacts in Canada and would cost less than TransCanada's proposal is irrelevant.

The CPA, APMC, CNG, and Tennessee were opposed to the proposed Blackhorse Extension and argued that the facilities were not needed.

The APMC argued that the provision of a second pipeline into the Western New York region should not be determinative of the interests of the users of the TransCanada system which the Board has an obligation to consider. The APMC was of the view that the issue of need was a matter of balancing the certainty of the provision of service through the Blackhorse Extension for 1 November 1991 against the possibility that service would be available at a lesser cost through the existing Niagara export point but not until 1 November 1992. The APMC went on to say that no party would be materially adversely affected in the event the Board denied the Blackhorse Extension now so that the possibility of utilizing a lower cost alternative could be more fully explored.

CNG and Tennessee emphasized that the location of the border crossing at Chippawa, and thus the requirement for the Blackhorse Extension, was determined by the requirements of the May 1989 Agreement between TransCanada and Union (see section 1.3) which precluded the consideration by TransCanada of an alternative crossing at Niagara. CNG also argued that since the Empire line would not interconnect with the U.S interstate pipeline grid, the Blackhorse Extension would not enhance TransCanada's reliability at Niagara. In

conclusion, CNG maintained that considerable speculation would be required in order for the Board to find that there was a need for the Blackhorse Extension.

Tennessee argued that the reason for selection of the Chippawa export point was the TransCanada-Union settlement but that TransCanada's contractual obligation to Union does not bind the Board.

7.5 Views of Parties on the Niagara Line Alternative

The CPA submitted that expanding TransCanada's Niagara Line was preferable to constructing the Blackhorse Extension given the following considerations:

- expansion of the existing Niagara Line would result in capital cost savings of \$24.5 million;
- the Niagara Line has ample expansibility for the foreseeable future;
- there is willingness on the part of U.S. pipelines to provide the necessary service from the Niagara Falls export point to accommodate the requirements of the Empire shippers; and
- the Niagara Line alternative involves no additional environmental impacts.

The APMC, CNG and Tennessee also supported use of an expanded Niagara Line in conjunction with Tennessee's proposed expansion of the Niagara Spur Loop Line. These parties argued that this alternative provided a less expensive, environmentally benign means of providing the service required by the Empire shippers. They pointed out that the environmental impact of expanding the Niagara Line would be nonexistent and that the Niagara Line would still have $14.6 \cdot 10^6 \text{ m}^3/\text{d}$ (514 MMcf/d) of potential spare capacity available after accommodating foreseeable capacity increases. While admitting that the service requested by the Empire shippers would not be available until 1 November 1992 at the earliest if the Niagara

Line alternative were pursued, CNG and the APMC submitted that no party would be unduly affected by such a delay.

Opponents to the Niagara Line alternative argued that Tennessee's relatively late proposal to provide service for the Empire shippers was designed solely to eliminate competition and would mean additional delays in effecting service. IPAC argued that the risk that service might not be available in a timely manner outweighs the short-term economic benefits realized by expanding the existing TransCanada Niagara-Tennessee systems. St. Clair and RG&E alluded to possible legal difficulties that Tennessee might have in constructing its proposed facilities. TransCanada argued that the proposed Tennessee facilities did not provide the year-round peak capacity offered by the Blackhorse Extension to accommodate the Empire shippers; nor would they provide any of the service to be rendered by Empire's first twenty-five miles, including that required by Encogen, Indeck and NFG. TransCanada noted that Tennessee's Niagara Alternative would not provide the security and flexibility afforded by a second export crossing.

Enserch noted that RG&E and the cogeneration shippers have precedent agreements only with Empire or NFG and there is no indication they would be willing to have their volumes transported on an alternative route. Enserch argued it would be inappropriate for the Board to coerce shippers into using an alternative route by denying TransCanada's application.

In response, Tennessee submitted that none of the partners in the Niagara Spur Loop Line, nor any party to the GH-1-91 proceedings, had indicated any intention of placing legal impediments in the way of Tennessee's proposed expansion. Tennessee also argued that the peak and annual throughput capabilities associated with its proposal are fully consistent with the RG&E, Fulton and Kamine projects and that the other cogeneration projects (Encogen, Indeck-Corinth and Indeck-IIlion) could be accommodated by NFG. Tennessee maintained that it would be in a position to provide service to Empire shippers by 1 November 1992.

Chapter 8

Decision

There was clear evidence at the hearing that, through expansion of TransCanada's existing Niagara Line, the proposed markets can be served in a timely fashion by less expensive and environmentally superior means. The Board was persuaded by Tennessee's evidence that it is willing and able to accommodate the service requirements of RG&E, Fulton and Kamine Carthage by 1 November 1992; other cogeneration projects can be accommodated by NFG.

There is no indication that any party would be unduly adversely affected by the denial of the proposed facilities. All of the proposed shippers on the Blackhorse extension have alternative transportation options for volumes which would move before 1 November 1992. Furthermore, the Board notes that there was no certainty that Empire would be in a position to receive service by 1 November 1991, even with approval of the Blackhorse Extension.

The Board finds no basis for TransCanada's contention that exports at Niagara will continue to increase in the future at the same rate experienced in the past few years. The Board believes that, even with the proposed Empire volumes, ample capacity can continue to be made available on the Niagara Line for the foreseeable future through appropriate addition of compression. The Board also notes that any future expansion of the Niagara Line by looping would initially occur upstream of the proposed Blackhorse Extension, thereby nullifying the argument that the Blackhorse facilities would minimize environmental impacts in the near future. The Board particularly notes TransCanada's acknowledgement that expansion of the existing Niagara Line through the addition of compression and metering facilities would create minimal environmental impact.

The only benefits to the TransCanada system that would be provided by construction of the Blackhorse Extension would be marginal improvements in pipeline reliability and in operational flexibility. However, the proposed interconnection between Blackhorse and the U.S interstate pipeline grid via the link with NFG on Grand Island would provide transportation back-up for only a limited portion of the volumes transported by TransCanada between the proposed Blackhorse SMS and the existing Niagara export point.

The Board agrees that TransCanada has a responsibility to propose the construction or use of facilities that respond to the requests of its prospective shippers if, in TransCanada's view, these requests are reasonable. However, the Board has the responsibility to determine whether these proposals are in the public interest.

The Board notes that its conclusion that the Blackhorse Extension is not needed outweighs all other factors considered by the Board, regardless of what the Board's findings on those factors might have been. Even if the Board had made findings favorable to TransCanada on all other issues, the determination that the facilities are not needed would override such findings.

In light of the above, the Board denies TransCanada's application for an exemption order pursuant to section 58 of the Act in respect of the proposed Blackhorse Extension. Since this decision is based on the finding that the proposed facilities are not needed, the Board makes no findings on other issues considered in these proceedings.

Part IV Matters

Chapter 9

Tolling

The issue of the appropriate tolling methodology to be applied to the proposed facilities was included in the GH-1-91 proceedings at the request of the Industrial Gas Users Association ("IGUA"). The Board notes that IGUA did not actively participate during the subsequent proceedings.

In its evidence TransCanada outlined two possible tolling methodologies:

(a) a rolled-in, point-to-point toll to where the Blackhorse Extension takes off the mainline and then an additional incremental toll for the Extension; or

(b) treatment of the Extension as part of the integrated TransCanada system for cost allocation and toll design purposes, such that the toll for deliveries off the Extension would be calculated on a rolled-in, point-to-point basis, consistent with other export point tolls.

TransCanada argued for alternative (b), rolling-in the new facilities with the existing rate base, for the following reasons:

rolled-in methodology would accord the same rate-making treatment to this lateral as is accorded to all other laterals on the TransCanada system such as Ottawa, Timiscaming and Vermont;

alternative (a) would involve a segmentation of rate base which, it was argued, should be avoided for reasons advanced by TransCanada in GH-5-89.¹ In that hearing TransCanada argued that segmentation of rate base could result in different unit tolls for the same service, at the same delivery point, at the same load factors. In GH-5-89 TransCanada also argued that the U.S. markets and

customers would be treated in a disadvantageous and discriminatory manner if incremental tolling were applied to certain export customers but not to domestic customers;

the Blackhorse Extension has the potential to serve multiple customers and hence should be viewed as part of the integrated system;

domestic and export laterals should receive the same cost allocation and toll design treatment;

the Blackhorse Extension would not be used to provide a custom service. It would be used to provide a standard transportation service that is offered on TransCanada's system as a whole; and

given the relatively small capital cost of this lateral and hence its small impact on the cost of service, the tolling impact on other users would be *de minimus*.

In addition to these reasons, TransCanada argued that under Article 9, Sections 903 to 906 of the Free Trade Agreement between Canada and the United States of America, the country of destination of the gas cannot justify a different tolling treatment.

TransCanada's position in support of rolled-in tolls was supported by RG&E, St. Clair, IPAC and the APMC.

St. Clair argued that the Blackhorse Extension is typical of a number of existing TransCanada laterals, and should be tolled accordingly. Similarly, IPAC noted that if the Board determines that the Blackhorse Extension should be built by TransCanada, then it should be tolled on a rolled-in basis, consistent with the

tolling treatment of other extensions. The APMC agreed in principle with the evidence of TransCanada that, to the extent that the proposed lateral provides some system-wide benefits and forms a part of the TransCanada integrated system, a rolled-in tolling methodology is appropriate.

IGUA opposed rolled-in tolls as proposed by TransCanada for this extension. IGUA took the position that the costs of providing capacity to carry traffic to a new and regionally distant market area through the Blackhorse Extension ought to be recovered from traffic destined to that market area. It advocated the market-segregated, rolled-in methodology it had advocated in the GH-5-89 proceedings. However, IGUA did not seek to incorporate its GH-5-89 evidence into this proceeding.

Mr. Rempel, an affected landowner, expressed the view that the rolled-in toll structure is suitable within Canada but not for natural gas that is to be exported. He noted that not all Canadian agricultural products can compete with U.S. food products. If rolled-in tolls were added to their already disadvantaged situation, Canadian agricultural producers would be compelled to subsidize U.S. industries.

9.1 Capacity Assignment

As part of its application TransCanada requested the Board's approval of an assignment of RG&E's contracted capacity on the Union system to TransCanada. TransCanada took the position that, in order to provide a continuous service from St. Clair to Chippawa, TransCanada, and not RG&E, required the Union transportation. The volumes under the Union contract of $2876 \text{ } 10^3 \text{ m}^3/\text{day}$ correspond to the volumes in RG&E's contract with TransCanada.

In opposition to this proposal CNG argued that with rolled-in tolls, TransCanada would under-recover the incremental cost of service of these facilities with the

consequence that all of TransCanada's shippers would help pay for the transportation of RG&E's transit volumes.

Gaz Metropolitain, inc. ("GMi") questioned why TransCanada's tollpayers should assume any risk for RG&E's Union capacity when GMi and certain other Canadian distributors must contract directly with Union for firm transportation, thereby directly assuming financial risk and contractual responsibility. GMi argued that, if TransCanada wants to contract directly with Union on RG&E's behalf, TransCanada should assume the risks and costs and not pass these on to other tollpayers. GMi further proposed that, if TransCanada wants to offer custom transportation services, such as assuming RG&E's Union capacity, such services should be considered as non-regulated activity and associated risks should not be assumed by other tollpayers.

The APMC acknowledged that, in principle, the benefits of such capacity assignment to users of the TransCanada system could increase system flexibility. However, it argued that the record is unclear regarding the likelihood of this benefit being realized. The APMC took the position that if the Board found that there are benefits to TransCanada's system users, then it would be appropriate to include the Union M-12 costs associated with the assignment in the Transmission by Others component of the cost of service.

Views of the Board

In light of the Decision set out in Chapter 9, the Board finds it unnecessary to rule on toll methodology or the issue of capacity assignment at this time.

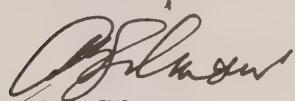
- 1 Portions of TransCanada's toll methodology evidence from GH-5-89 were incorporated into the record of these proceedings.

Chapter 10.
Disposition

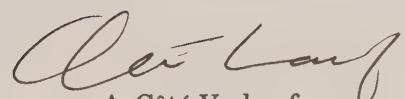
The foregoing chapters constitute our Decision and Reasons for Decision in respect of the application heard by the Board in the GH-1-91 proceedings.



M.J. Musgrove
Presiding Member



A.B. Gilmour
Member



A. Côté-Verhaaf
Member

Ottawa, Canada
July, 1991

TRANSCANADA'S CRITERIA FOR EVALUATION OF ALTERNATIVES

1. maximize the distance along which an existing right-of-way can be paralleled and immediately adjacent.
2. minimize the disturbance of new non-adjacent right-of-way required.
3. maximize the distance along an existing right-of-way which can be used for temporary work room.
4. minimize distance which has saturated silts and sands within the right-of-way.
5. minimize distance through wetland/organic soils/muck.
6. minimize impacts on forest resources, including farm woodlots.
7. minimize impacts on Environmentally Sensitive Areas potentially affected by the route.
8. minimize the number of streams crossed
 - non-sensitive (Warm Water)
9. minimize number of major river crossings.
10. minimize number of road crossings, particularly Provincial highways and paved roads.
11. minimize distance adjacent to poultry farms or other sensitive livestock operations.
12. maximize distance through idle lands.
13. minimize distance through specialty croplands especially those supporting perennial crops, such as orchards, vineyards and ginseng.
14. avoid or minimize distance through other land uses such as:
 - dense residential development;
 - areas of urban encroachment;
 - intensively-used recreational area;
 - industrial areas (although this can be considered as a positive benefit as well);
 - areas having pits or quarries;
 - areas having significant archaeological potential; and
 - areas in which future development is known to be planned.
15. avoid lands of specific status such as parks, cemeteries and Indian Reserves, designated historic sites.
16. minimize impact to water supply systems and groundwater resources.

17. maximize distance along which the proposed right-of-way will follow the land fabric and geometry of the landscape.

18. minimize impacts on potentially affected wildlife habitat such as:

- deer yards;
- significant over-wintering areas;
- areas where Rare and Endangered Species are reported to occur.

TransCanada PipeLines Undertakings to the Ontario Pipeline Coordination Committee

TransCanada will undertake the following:

1. to prepare a detailed archaeological evaluation of the final route prior to construction;
2. to avoid archaeological sites during construction , but, if avoidance is not possible, excavate all known sites which would be affected by construction;
3. to produce a report which documents the results of the detailed archaeology field survey and any excavations undertaken;
4. to advise the Chairperson of the Ontario Pipeline Coordination Committee of the name of the Construction Supervisor and the field Environmental Inspector, 10 days prior to construction;
5. to notify the local Ontario Ministry of Environment, Ministry of Natural Resources and the Chairman of the OPCC of the date and location of the environmental seminar to be held for construction and supervisory personnel; and
6. to provide the Chairperson of the OPCC, copies of all Post-Construction and As-Built reports for information.

